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INTRODUCTION

Planning for the 1980 census began while the last phases of the 1970 census were still underway, and funding for formal planning started with the beginning of fiscal year 1974, in July 1973. The planning process included a critique of the experiences in the 1970 census, internal Bureau task forces that investigated proposals for 1980, congressional review, consultation and contacts with data users, and a series of procedures and content tests.

This chapter will focus on the latter two components of planning—the extensive contacts with data users and the 1980 census pretests. The evaluation of 1970 census experiences was discussed in the PHC(E) series of reports from the 1970 census.¹ The chapter in this publication on litigation and legislation includes a description of the congressional review process as it related to the 1980 census.

Planning had to begin several years prior to 1980 to allow sufficient time to collect and review recommendations about how to conduct the census and to test both the census questions and procedures prior to implementing the census plan. Several key deadlines had to be met. For instance, the Bureau was obliged to inform Congress of the general subject items to be asked 3 years before, and the specific content items 2 years before, Census Day (Apr. 1, 1980). A final dress rehearsal of census content and procedures needed to be conducted 2 years before Census Day to allow time to make adjustments and to begin early census activities. Major preparatory operations—compiling addresses and printing questionnaires—had to begin in early 1979, over a year before Census Day.

CONSULTATION AND CONTACTS WITH DATA USERS

In planning the 1980 Census of Population and Housing, the Census Bureau made numerous contacts and consulted a broad spectrum of data users. The major programs for informing data users and gathering recommendations from them are described below. Participants in local public meetings held throughout the country were asked to suggest improvements for the 1980 count. Meetings were held with State planning agency officials to get their views. Representatives of more than 90 Federal agencies were brought together to outline Federal data needs, to provide ideas on census content, and to review other matters related to the census. Several census advisory committees, including three representing minority populations, gave advice on all aspects and phases of the census. Regional meetings held with American

Indian, Eskimo, and Aleut groups were a forum for the exchange of ideas on how best to count Native Americans. A panel of the National Academy of Sciences/National Research Council reviewed census plans and made recommendations. Components of the Bureau's Minority Statistics Program made extensive contacts with national and community minority organizations to inform these groups of 1980 census plans and to gather comments.

It should be noted that there were numerous other formal and informal contacts with data users over the entire decennial census period that did not fall under the programs discussed here, but which contributed greatly to gathering suggestions on, and imparting knowledge about, the census.

Local Public Meetings

Local public meetings were held in 73 cities, covering every State and the District of Columbia, between October 1974 and July 1975 to give knowledgeable data users and the interested public an opportunity to comment on the 1970 census and to make suggestions for the 1980 census. The Bureau discussed the prospect of such meetings with the national organizations of the U.S. Chamber of Commerce, the American Statistical Association, and the American Marketing Association, and asked that they sound out their local chapters on the possibility of sponsoring the meetings. In addition, a national press release was issued in October 1974 inviting other local groups to organize conferences. Local chambers of commerce, chapters of professional associations, councils of government, business and university groups, regional offices of the Department of Commerce and the Bureau of the Census, and field offices of the Domestic and International Business Administration (now the International Trade Administration, in the Department of Commerce), among others, promoted and sponsored sessions.

Bureau staff worked closely with the organizers and agenda were prepared jointly. In most cases, the local sponsors were asked to provide a location for the meeting, select a chairperson, handle registration, and generate publicity in both the print and broadcast media, though Bureau staff sometimes contacted local media. In all, some 6,000 individuals participated in these meetings, with nearly half representing State and local governments; the remainder came from academic institutions and the private sector. Representatives from the Census Bureau attended each session to describe the status of 1980 census planning to answer questions, to collect comments, criticisms, and suggestions, and to distribute forms so that attendees or other interested people could mail in comments later.

Participants made recommendations on precensus activities, the relationship between the Bureau and local communities, data

¹U.S. Bureau of the Census. *Evaluation and Research Program of the 1970 Census of Population and Housing*. PHC(E). Washington, DC, 1973-79.

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collection and enumeration procedures, questionnaire materials and design, subject content, tabulations, data dissemination, user services, and geographic areas. Their input was important in planning the census. Recommendations to obtain data on disabilities were frequent, as were requests for more small-area data, the coordination of census content with the data demands of Federal agencies, and the earlier release of all census data products. (See app. 2A for a list of these meetings.)

Professional Associations

From November 1974 to June 1976, the Bureau conducted 23 conferences at the gatherings of national professional associations. (See app. 2A for a list of these meetings.) The purpose of the meetings was to augment the local public meeting program by giving members of these associations an overview of plans for the 1980 census and an opportunity for their members to ask questions about or make recommendations on the census. Bureau personnel were present at each meeting to conduct workshops, which generally consisted of short introductory presentations followed by time for audience comments and recommendations.

State Agency Meetings

In February 1974, the Director of the Census Bureau wrote the Governor and top planning official in each of the 50 States and officials in the District of Columbia, asking for their comments and suggestions on plans for the 1980 census. Beginning in November 1974 and continuing through December 1975, 16 regional meetings were held throughout the country between State representatives and Bureau personnel to review the States' recommendations. (See app. 2A for a list of these meetings.)

The State planners made recommendations on precensus activities, community relations, enumeration procedures, subject content and tabulations, data dissemination, geographic areas, suppression of census data for reasons of privacy and confidentiality, and other topics.

Summary Tape Users

In late 1974 and early 1975, the Bureau funded three meetings, one each for academic, governmental, and private-sector users of the 1970 census summary computer tapes and the public-use microdata samples files. The meetings were to obtain recommendations from the primary users of machine-readable census data from 1970 to facilitate the planning for comparable materials from the 1980 census. (See app. 2A for the list of meetings.) A member of each group was invited by the Bureau to organize a meeting. Each gathering was attended by 13 or 14 users and several Bureau personnel. The suggestions and recommendations of the participants covered the areas of technical documentation, technical conventions and physical characteristics of computer tapes, the content and structure of tape files, software, summary tape processing centers, and other topics.

National Mailout

In another effort to solicit the opinions of data users, the Director wrote to the heads of 4,700 national trade and professional associations and labor unions in January 1976, requesting that

they include a notice in their newsletters or other publications asking members to send in any suggestions, questions, or comments relating to plans for the 1980 census.

Reapportionment and Redistricting Meetings

A series of meetings held with appropriate State officials in all 50 States between January and July 1976 arose out of the Bureau's responsibilities under Public Law 94-171, enacted in 1975. This legislation required that the Bureau provide, by April 1, 1981, 1980 census total population counts for small areas to the Governor and officers or public bodies responsible for legislative redistricting in each State. Earlier in the decade the Bureau had undertaken a series of discussions with representatives of the National Conference of State Legislatures, the U.S. Conference of Mayors, and the National League of Cities. These discussions centered around the need for and feasibility of providing census data for election precincts or similar entities.

At the meetings in 1976, each State's needs for reapportionment and redistricting data were discussed. The Bureau described its plans for presenting data by election precincts for States which chose to participate in the Bureau's election precinct program. To get precinct data, the States had to meet certain criteria, including presenting the Bureau with maps on which the precinct boundaries were clearly delineated and followed visible features or municipal limits. (For more information relating to Public Law 94-171, see Ch. 8, "Data Products and Dissemination.")

Federal Agency Council

An important source of input on the content of the 1980 census questionnaire and on other aspects of the census program, including the tabulations, was the Federal Agency Council for Demographic Censuses (originally called the Federal Agency Council on the 1980 Census).² Federal agency councils were organized to help in planning the 1960 and 1970 censuses and in 1974, at the request of the Census Bureau, the Office of Management and Budget (OMB) established the Council for the 1980 census. The Council was chaired by a representative of the OMB's Statistical Policy Division.³

The Federal Agency Council was established to provide an organized means of transmitting to the OMB and to the Census Bureau the comments and advice of Federal agency users of decennial census data and to provide a structure for the Bureau to keep these users informed of its plans and developments for the 1980 census. The attention of the Council was focused on broad aspects of the census, such as proposals for changes in questionnaire content, major changes in procedures or samples, and tabulation and publication plans.

The Council held its first meeting in December 1974. The initial phase of the Council's activities was devoted to questionnaire content. Because of the large size of the Council, it was decided to convene meetings of the entire body infrequently (it

²The name change occurred when the scope of the Council was extended to cover the then proposed 1985 mid-decade census.

³This division was transferred to the Department of Commerce in October 1977 and renamed the Office of Federal Statistical Policy and Standards (OFSPS). The chairmanship passed with it. In 1981, it was transferred back to OMB, and the name changed to the Statistical Policy Branch, but was abolished in 1982 and its functions consolidated into a Regulatory and Statistical Analysis Division.

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held seven meetings through March 1982). Nine subject-area working committees (later 10 when one committee split), bringing together agencies with common areas of interest, were set up to draft proposals for content in the areas of income, the labor force, occupational classification, transportation, education, housing, disability and health (originally one committee, later split in two), race and ethnicity, and general demography. Reports from the subject-area working committees were virtually all completed by late 1975 and the Bureau began discussions with OMB on the committees' proposals at that time.

In addition to the attention given to subject content in the first phase of the Council's work, the member agencies were also asked to submit statements by May 1975 on geographic area requirements. Beginning in 1977, Council members were asked to provide input on tabulations and proposed table outlines of census publications. They were asked to give particular consideration to the data needs of local officials for Federal grant applications and affirmative action programs. (See Key Personnel appendix at the end of this publication series for the list of members of the Federal Agency Council.)

Census Advisory Committees

The Bureau's census advisory committees played an important role in planning for all phases of the decennial census. During the census period, the Bureau had 11 committees that dealt to varying degrees with issues relating to the 1980 census. Members represented community and national organizations, academic institutions, business and professional associations, consumer interests, elected public officials, and the clergy. The function of the committees was to advise the Director on various matters relating to the Census of Population and Housing and other Bureau programs. Representation on the committees changed frequently, and certain members served on more than one body during the decennial census period. (See Key Personnel appendix in this publication series for advisory committee membership lists.) Generally, the committees met twice a year.

The committees advised the Director on data needs, what questions to ask in the census and how to ask them, coverage-improvement procedures, publicity and minority outreach, statistical standards, tabulations and data dissemination, and policy issues such as whether to adjust census counts.

Standing committees—The Census Advisory Committee of the American Statistical Association (ASA) is the oldest standing advisory committee of the Census Bureau. A joint committee of the ASA and the American Economic Association (AEA) was established in 1918 to advise the Director on plans for the 1920 decennial census, and it met regularly from 1919 on. In 1937, however, the Committee was reconstituted so that all of its members were chosen by the ASA, and the AEA was not represented by any particular census advisory committee until 1960, when the Census Advisory Committee of the AEA was established. The Census Advisory Committee of the American Marketing Association was formed in 1946, and the Census Advisory Committee on Population Statistics, in 1965.

1980 census committees—Because of the widespread concern about the undercount of minorities in the 1970 census, three advisory committees, representing different communities, were established.

The Census Advisory Committee on the Black Population for the 1980 Census was established in October 1974, holding its first meeting in February 1975 and its last in October 1980. The Census Advisory Committee on the Spanish Origin Population for the 1980 Census was established in March 1975 and held meetings periodically between July 1975 and October 1980. The Census Advisory Committee on the Asian and Pacific Americans Population for the 1980 Census was established in June 1976 and held its first meeting in August 1976 and its last in October 1980.

The Census Advisory Committee on Housing for the 1980 Census was set up in April 1976. It held its first meeting in November 1976 and its last in November 1980. A similar committee for the 1970 census was created in 1961 and disbanded in 1971, and a housing advisory group for the 1960 census met from 1957 to 1961.

Defunct committees—The Census Advisory Committee on State and Local Statistics was formed in 1976 when two other census advisory committees—on State and local government statistics and on small areas—were merged. The combined committee met twice the year it was established and then was disbanded in a Governmentwide move to reduce the number of public advisory committees. Several of its members were appointed to other census advisory committees.

The Census Advisory Committee on Privacy and Confidentiality was established in 1971, held its first meeting in September 1972, and met periodically until it was dissolved in 1975.

Regional American Indian and Alaska Native Meetings

Based on advice received from the American Indian and Alaska Native community, the Bureau did not request the Secretary of Commerce to establish an advisory committee on the American Indian, Eskimo, and Aleut populations for the 1980 census. Because of the diverse groups within the Indian population and unique local conditions, community representatives felt that another arrangement would be more productive in obtaining input for the census. Therefore, the Census Bureau, with the assistance of American Indian, Eskimo, and Aleut organizations, sought input for the 1980 census through a series of regional meetings held in appropriate locations across the country.

From 1976 to 1980, 14 meetings were held with American Indian and Alaska Native regional groups or their national conferences. The gatherings, most of which were held in 1978, were in various locations across the country: Albuquerque, NM (2); Anchorage, AK; Arlington, VA (2); Bismarck, ND; Boston, MA; Nashville, TN; Oklahoma City, OK; Phoenix, AZ; Sacramento, CA; Spokane, WA; Washington, DC; and Wausau, WI.

At the meetings, census representatives provided an overview of the Bureau's minority programs, information on map usage, descriptions of 1970 census data available from the Census Bureau, in-depth information on the proposed 1980 race question, a review of 1970 census procedures, and the plans to enumerate the American Indian, Eskimo, and Aleut populations in 1980. Time was allotted to receive questions, comments, and recommendations from the participants on these and other subjects. Particular concern was expressed about the following issues: Improving the 1980 census count; administration of a

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supplementary questionnaire at American Indian households on reservations; use of local enumerators and office staff; the publication of 1980 census data on American Indians, Eskimos, and Aleuts; and the use of official/legal boundaries of reservations in the enumeration.

Summary Tape Processing Center Conferences

Two-day conferences for Summary Tape Processing Center Program representatives were held in Arlington, VA, in November 1977, and in Denver, CO, in December. The Summary Tape Processing Center Program was established by the Census Bureau in 1968 as a clearinghouse or referral service for users needing data processing services. The processing centers were neither franchised, established, nor supported by the Census Bureau, but provided services at their own initiative. In order to emphasize this relationship, the Bureau changed the name of the program in 1981 to National Clearinghouse for Census Data Services.

About 180 participants attended the two conferences. Bureau representatives described the status of 1980 census activities, tentative plans for 1980 products and services, and current statistics available on computer tape. The data users offered their thoughts on new or improved products and services and formulated recommendations.

Four working groups were formed at each conference to facilitate the preparation of recommendations. Two concentrated on tabulation contents, reports, data files, and other data product considerations; another dealt with maps and geographic reference products; and the fourth was concerned with the broad range of user services.

Committee on National Statistics' Panel on Decennial Census Plans

In the fall of 1977, the Secretary of Commerce asked the National Academy of Sciences (NAS)/National Research Council (NRC) to undertake an evaluation of the 1980 census plans, particularly with regard to coverage issues.⁴ In December 1977, the Committee on National Statistics of the NAS/NRC appointed the Panel on Decennial Census Plans. Its 14 members were individuals knowledgeable about statistics, communications, demography, sociology, economics, city planning, and anthropology. Three of the members also served on census advisory committees. (See the Key Personnel appendix in this publication series for the list of members.)

The panel was set up to look into four issues: (1) plans for improving the decennial census, (2) procedures for handling contested counts, (3) the feasibility of adjusting the counts, and (4) plans for evaluating the 1980 census and for designing future censuses. The full panel met three times from January to April 1978, and, in addition, smaller groups of members met separately to consider particular issues. The panel circulated a draft report in the summer of 1978 and issued its final report later that year.⁵

⁴In 1969, the NAS had established the Advisory Committee on Problems of Census Enumeration to conduct a study for the Census Bureau on ways to improve the completeness and accuracy of information collected in the decennial censuses and in intercensal household surveys carried out by the Bureau and other government agencies. The report of that committee, *America's Uncounted People*, was published in 1972.

⁵National Academy of Sciences, *Counting the People in 1980: An Appraisal of Census Plans*. 1978.

The panel made nearly 30 recommendations relating to coverage-improvement procedures, census staffing problems, the public information and community relations programs, the questionnaire and its effect on response, questionnaire items on race and ethnic origin, household composition, plans for local review and procedures for handling contested counts, the possibility of adjusting census counts and population estimates to compensate for underenumeration, and an evaluation of the 1980 census and steps to improve future censuses.

With regard to the issue of adjusting census counts, the panel concluded that inequities resulting from the geographic differentials in the census undercount could be reduced by adjusting the data and that methods of adjustment with tolerable accuracy were feasible. The panel believed that the question of adjustment was a policy decision the Secretary of Commerce should make, but that if counts were to be adjusted, the Bureau ought to determine the procedures and that these should be agreed upon in advance of the census. Furthermore, adjusted counts ought to be used only for the purpose of allocating funds and not for apportioning seats in the House of Representatives.

Workshops and Conference on the Adjustment Issue

In the late summer of 1979, the Bureau continued a series of steps designed to help it reach a decision on whether to adjust 1980 census counts to compensate for underenumeration. Support for adjustment had been voiced by several sources throughout the 1970's and gained momentum with the statement by the Panel on Decennial Census Plans. Although the Bureau had been quite active in conducting research concerning the undercount, the panel called on it to continue to investigate methods for measuring the undercount and for adjusting.

The Bureau convened a census undercount workshop in early September 1979. The workshop participants included management and professional personnel from the Bureau, the Department of Commerce, and a few others familiar with the undercount issue and its implications. The purpose of the workshop was to raise all the relevant issues and assumptions relating to adjustment. It was structured to identify organizations or groups that would have a stake in the outcome of a given plan and to uncover the key assumptions involved in adjustment. The assumptions and issues were subjected to extensive debate, and those that would be key to making a decision on adjustment were isolated. The proceedings of the workshop were printed in October 1979 and widely circulated for review and comments.⁶

The Bureau next sponsored the Conference on Census Undercount held in Arlington, VA, in February 1980, to provide a forum for considering alternative approaches to measuring the census undercount and to assess the implications of adjustment. To investigate a broad range of concerns at the conference, the Bureau undertook a general solicitation of issue papers. Under the direction of a conference steering committee (see Key Personnel appendix in this publication series for steering committee and conference attendance lists), 17 papers were selected for presentation. The steering committee also guided the general planning and program for the conference. More than 140 academic, governmental, business, and legal professionals

⁶U.S. Bureau of the Census, *Proceedings of the Undercount Workshop*. October 1979.

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attended, and an account of the proceedings was issued in July 1980.⁷

Finally, a second undercount workshop was held in September 1980 to examine the most critical underlying assumptions that would establish a proper framework for deciding whether, when, and how to adjust 1980 census results for undercoverage and to reach a consensus on these within the Bureau. The findings of this workshop were issued in early October and circulated for comments.⁸

As mentioned in chapter 1, throughout this process the Director of the Bureau had announced his intention not to issue a decision on whether to adjust until late 1980, after the field enumeration was completed and when there might be some indication of the quality of the census. On December 11, 1980, the Director called a news conference to announce that the Bureau would not adjust 1980 census population totals unless directed by the courts to do so. This decision was also published in the *Federal Register*. (For more on the adjustment issue, see ch. 10 on litigation and legislation.)

Minority Statistics Program

The Census Bureau established the Minority Statistics Program in 1974 to obtain recommendations and support from minority populations and to encourage their participation and enumeration in the census, inform them of the usefulness of the statistics provided by the Bureau, and assist them in the use of such statistics. The minority populations included Blacks; Hispanics; American Indians, Aleuts, and Eskimos; and Asian and Pacific Islander Americans. The Minority Statistics Program functioned through several major components. One of these was the minority advisory committees discussed above, and two others were the National Services Program and the Community Services Program.

National Services Program—The Bureau's National Services Program, established in 1974 as a component of the Minority Statistics Program, developed and maintained contacts with national (as distinguished from local) minority organizations. The types of organizations covered included civil rights, economic and welfare rights, religious, media, professional, and business groups. Bureau representatives attended and, to the extent possible, participated in national conventions of these organizations.

The Bureau's convention activities frequently included a census exhibit or display, staffed by Bureau representatives. The exhibit visually presented the Bureau's program as it applied to the particular minority group, displayed a variety of publications, and provided request or order forms for publications. Bureau personnel were able to establish face-to-face contacts with leaders and members of the organizations, as well as with leading citizens of the host cities and with other exhibitors, who themselves often represented influential institutions and organizations. Presentations and workshops on the 1980 census were given by census staff at the conferences. Recommendations were sought for improving the accuracy of the population count and the quality of census data, assistance was provided regarding the use of Bureau publications and other statistics, and preliminary arrangements

were made for mutual cooperation in conducting the 1980 census.

Community Services Program—The Community Services Program (CSP), another component of the Minority Statistics Program, was established in 1974. It grew out of the experience with the 1970 census Community Education Program. The CSP developed and maintained communication with minority groups and influential individuals at regional, State, and local levels, unlike the National Services Program, which communicated with national organizations. Contacts were made with local leaders and institutions that exerted influence on persons who might not ordinarily be counted in the census. The program sought to obtain the trust and active cooperation of such groups and individuals and to convince them of the confidentiality of the information they furnished. It also endeavored to make them aware of the advantages of being included in the census, to inform them of the availability of Bureau data useful to them, to explain the uses of the data, to obtain recommendations for improving the coverage and quality of the census, and to enlist their help in recruiting census district office and field staffs. More than 200 community services specialists were active in the field by Census Day, April 1, 1980.

Other Contacts

Data User News—This publication, originally called *Small Area Data Notes*, has been published monthly since 1970 and provides information on new reports, services, and Bureau activities, including the 1980 census. More than 9,000 copies were distributed each month in 1980. This publication served as a means both of informing data users on the status of the 1980 census and as a forum for requesting users' opinions on a variety of subjects.

1980 Census Update—This publication first appeared in January 1977, and quarterly thereafter, as a supplement to the *Data User News*. Its last issue was July 1981. By 1980, more than 25,000 copies were being distributed outside the Bureau. The purpose of *Update* was to keep a wide range of people concerned with the 1980 census informed on its activities and products. For instance, the first issue discussed census law, reapportionment and redistricting data, data user contacts, the Minority Statistics Program, and pretest activities.

1980 census users' conferences—Major conferences were held in 15 large cities between September 1979 and January 1980 to familiarize the public with the status, content, and programs of the 1980 census and to provide information on the availability of 1980 census products. Conferences for about 4,200 persons were sponsored by the Bureau's regional offices, State data centers (formed under joint statistical agreements between the Bureau and the States), previous local public meeting sponsors, and/or others. (See app. 2A for the list of meetings.) For instance, a November 1979 meeting in the city of New York was sponsored by the New York City Department of Planning, the local chapters of the American Statistical Association and the American Marketing Association, and the Census Bureau's New York regional office. Expenses for these conferences—travel costs of Bureau personnel, materials and facilities—were paid by the

⁷U.S. Bureau of the Census, *Conference on Census Undercount*. July 1980.

⁸U.S. Bureau of the Census, *Proceedings of the Second Census Undercount Workshop*. October 1980.

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Bureau. The local sponsors, with guidance from the Bureau's regional data user services officers, were responsible for setting conference dates, obtaining and approving facilities, registration, and other arrangements.

The conferences were generally conducted by a team of two, one from Bureau headquarters and one from a regional office, using a standardized presentation, including visual aids and reference materials. The meetings usually covered an overview of the 1980 census; questionnaire design, data collection, and processing; geographic and subject content definitions and concepts; data products; uses of census data; and availability of user services. The meetings were promoted by brochures, press releases, and notices in trade and professional journals and newsletters.

A second phase of the 1980 census users' conference program concentrated on holding meetings in States where they had not previously been held. A further goal was to hold at least one in each SMSA. These meetings were conducted throughout 1980 and into 1981, and were the responsibility of the regional data user services officers (now called information services specialists). All expenses were met by local sponsors, including the travel costs of Bureau participants.

PRETESTS AND DRESS REHEARSALS

One of the most important components of the planning for the 1980 census was the series of pretests and dress rehearsals that were conducted between 1975 and 1979. The pretests were designed to examine the feasibility and cost-effectiveness of alternative or new field methodologies, enumeration procedures (particularly those designed to improve the coverage of

the population), and questionnaire content items. These tests ranged in scope from one-subject tests, such as the National Mail Income Pretest, to the three major pretest censuses that were conducted in Travis County (in the Austin SMSA), TX, Camden, NJ, and Oakland, CA. These pretests were "mini-censuses" in which most facets of enumeration were studied. The dress rehearsal censuses conducted in the Richmond, VA, area, in two counties in southwestern Colorado, and in that part of New York's Manhattan Borough south of Houston Street were the final run-throughs of procedures planned for the 1980 census. During the dress rehearsals, efforts were made to keep the testing of new procedural and questionnaire content alternatives to a minimum, with the intention of changing only those methodologies that proved problematical. In fact, it was necessary to test a few alternatives and to introduce a limited number of new procedures in the dress rehearsals, and some procedural and content changes were made as a result of the experiences in them.

The extensive evaluation process for the tests consisted of formal statistical analyses, time studies, reports based on personal visits to observe the field operations, and headquarters interdivisional meetings. Some of the statistical analyses appeared in a series of results memoranda that are listed in appendix 2B; the factfinding visits to the field offices were recounted in "field observation reports"; and other observations or decisions were included in interdivisional memoranda.

The tests with their dates and costs are listed below. Dates shown are generally for the time of questionnaire mailout or the beginning of enumeration or listing, but where there was no such key activity, a general time frame is given.

A pretest conducted in Puerto Rico is discussed in Chapter 11, "Puerto Rico and Outlying Areas."

Test	Date	Cost (dollars)
San Bernardino County, CA, Special Census	April 1975	104,000
Salem County, NJ, Income Pretest	April 1975	170,000
National Mail Income Pretest	May 1975	29,000
Rural Listing Test	September 1975	311,000
Pima County, AZ, Special Census	October 1975	77,000
Tape Address Register Development Test	Fall 1975- Winter 1976	208,000
Travis County, TX, Pretest	April 1976	2,294,000
Data Collection Unit Test	May 1976	111,000
National Content Test	July 1976	653,000
Camden, NJ, Pretest	September 1976	1,216,000
Navajo Reservation Pilot Study	September 1976	^a 250,000
Rural Relist Test	January 1977	269,000
Oakland, CA, Pretest	April 1977	3,945,000
Dress Rehearsals		
Richmond, VA area	April 1978	4,711,000
La Plata and Montezuma Counties, CO	April 1978	
Lower Manhattan, NY	September 1978	
National Test of Spanish Origin ¹⁰	July 1978	19,000

^aThe Census Bureau bore about one-third of the cost, while the remainder was covered by other interested Federal agencies.

¹⁰This was not part of the dress rehearsal censuses, but it is discussed under the heading of "Lower Manhattan."

San Bernardino County, CA, Special Census

In the spring of 1975, the Bureau carried out a special census at the request of the officials of San Bernardino County, CA. (The Bureau conducts special censuses between decennial enumerations at the request and expense of local governments. Usually, only population totals and a limited number of characteristics are provided.) Although the county bore the expense for the special census, the Bureau paid for testing several proposals related to 1980 census planning. Two district offices for the special census, in the cities of Barstow and San Bernardino, opened in early March and closed in late May and late June, respectively. Census Day was April 1.

The San Bernardino County test was not used to test office organization or procedures, but offered the first opportunity to try a plan to place computer terminals in district offices as part of the Bureau's 1980 data communications network. (In 1970, data-entry terminals were located only in the regional offices and in Bureau headquarters.) The district office terminals were tested for use in: (1) the transmission of population and housing unit counts for the smallest geographic levels to headquarters for editing and aggregation to higher-level geography, (2) the preparation of cost and progress reports for management and control of data collection and processing, (3) the payment of field staff, and (4) facilitating a local review of population housing-unit counts. Although there were some problems with the communications system, the results of the test showed that the proposal was worth pursuing further, and the terminal configuration was employed with some modifications in several later tests—Pima County, AZ, Travis County, TX, Camden, NJ, and Oakland, CA.¹¹ The decision was eventually made, however, not to place terminals in the census district offices in 1980 because of the cost involved and the potential difficulty in servicing the equipment.

A procedure for the local review of census counts was also tested for the first time. The Bureau had wanted to include a review of both preenumeration housing-unit estimates and postcensus preliminary population and housing-unit counts by local officials before closing the district offices. Since special censuses are conducted by the door-to-door technique, however, there was no mailing list from which preenumeration housing-unit estimates could be derived; thus, local review was limited to postcensus counts at the block level. Because this program had not been tested before, there were no specific procedures for conducting the review, and these had to be worked out during the test. The population counts were released at a press conference attended by officials from the county and most of its 14 incorporated places. Among the recommendations coming from officials during this test were that a standard local review informational package be developed for mailing to local jurisdictions and that the local officials be notified about the program at an early date. One important question not resolved in this test was what evidence of an undercount had to be provided by local officials before the Bureau's district office would send out field workers to recheck the count. Local review was tested in a number of subsequent tests, and remained a part of 1980 census planning, although its bipartite nature—preenumeration and

postenumeration—was modified: In the 1980 census, there was one review phase, conducted between the first and second waves of followup.

Vacant mobile homes and trailers available for occupancy were excluded from the 1970 housing inventory, but were counted in San Bernardino County as a means of better reflecting the amount of available housing. They were not counted if located on a sales lot, used for business purposes, used only for extra sleeping space, or not intended for occupancy where they stood. Based in part on the results of this test, this type of housing unit was included in the 1980 census. In another experiment as part of this test, the creation of blocks in rural areas using topographical features as boundaries proved infeasible. Enumerators had difficulty canvassing the blocks with nonroad boundaries in a systematic manner and in assigning households to the correct blocks.

Salem County, NJ, Income Pretest

The Salem County, NJ, income pretest was designed to test the feasibility and methodology of collecting income data on a 100-percent basis, i.e., inquiring about income on both the short- and long-form questionnaires.

Income statistics were collected on a 20-percent sample basis in 1970. Inasmuch as sample data are not as accurate as complete-count data, and are relatively less accurate for small places than for large ones, there had been a demand for improved income statistics for small areas since the publication of the 1970 census income data. These were particularly important in the light of revenue-sharing needs since revenue-sharing legislation had been enacted in the early 1970's. In response to these demands, the Bureau developed and tested a version of the income question for inclusion on the short form.¹² The purpose of the Salem County test was to compare for accuracy the results derived by using three short-form variants of the income question with those from the more detailed question on the long-form questionnaire.

Salem County was chosen as the test site because its 1970 demographic profile was sufficiently representative of the Nation's that valid insights could be drawn and results could be compared with those of a companion national test. Salem County's 1970 population of about 60,000 (about 15 percent was Black) was also large enough to assure statistical reliability.

Census Bureau enumerators compiled a list of mailing addresses in Salem County. Questionnaires were sent to each housing unit on the list on April 24 and 25, 1975, and householders were asked to mail back their forms to the local census office in the city of Salem. There were four questionnaires, each containing a different income question. Each questionnaire was sent to a different 25 percent of the housing units, and a card reminding persons to fill out and mail back their form was sent to each address a week later.

The form D income question (see fig. A) was the most detailed and was used for control purposes. A similar multipart question was being considered for the 1980 census long form. It was assumed that the more detailed the question, the more income

¹¹A report, "Feasibility Study for Data Entry and Communication Network (DLACON)," summarizing the findings from the tests, was issued in October 1977.

¹²The questions on the census short form are also asked on the long form and are asked of every person or household. The data from these questions are called "complete-count" or "100-percent" data. The long form also contains questions asked of a sample of the population and the data derived from these questions are called "sample" data.

Figure A. Salem County and National Mail Income Test Question Variants

Form A

9. Did this person receive any earnings in 1974 from:

a. Wages or salaries?

Wages or salaries

☐ Yes
☐ No

b. Own farm or nonfarm business, partnership, or professional practice?

Business or farm

☐ Yes
☐ No

10. Last year (1974) did this person receive any income from:

a. Interest, dividends, or net rental income?

Interest, dividends, net rental income

☐ Yes
☐ No

b. Social Security or Railroad Retirement?

Social Security or Railroad Retirement

☐ Yes
☐ No

c. Public assistance or welfare?

Public assistance or welfare

☐ Yes
☐ No

d. Unemployment compensation, veterans' payments, pensions, alimony, or any other income received regularly?

Other income

☐ Yes
☐ No

11. What was this person's total income in 1974 from all sources?

☐ None
☐ Loss

☐ \$1 to \$499
☐ \$500 to \$999

☐ \$1,000 to \$1,999
☐ \$2,000 to \$3,999

☐ \$4,000 to \$5,999
☐ \$6,000 to \$7,999

☐ \$8,000 to \$9,999
☐ \$10,000 to \$11,999

☐ \$12,000 to \$14,999
☐ \$15,000 to \$19,999

☐ \$20,000 to \$24,999
☐ \$25,000 to \$34,999

☐ \$35,000 to \$49,999
☐ \$50,000 or more

Include wages or salary before deductions for taxes, dues, or other items; income from business or farm (net after operating expenses); and income received regularly from any other source.

Exclude lump sum amounts such as gains from the sale of property.

Form B

9. How much did this person earn in 1974 from:

a. Wages or salaries? (Before deductions for taxes, bonds, dues or other items.)

\$-----

00

OR

☐ None

b. Own farm or nonfarm business, partnership, or professional practice? (Net after operating expenses. If business lost money, write "Loss" above amount.)

\$-----

00

OR

☐ None

10. Last year (1974) how much did this person receive from other income such as:

a. Interest, dividends, or net rental income?

\$-----

00

OR

☐ None

b. Social Security or Railroad Retirement?

\$-----

00

OR

☐ None

c. Public assistance or welfare? (Include Supplemental Security Income, AFDC, or other public assistance.)

\$-----

00

OR

☐ None

d. Unemployment compensation, veterans' payments, pensions, alimony, or any other income received regularly? (Exclude lump sum amounts such as gains from sale of property.)

\$-----

00

OR

☐ None

11. What was this person's total income in 1974?

(Add all entries in questions 9 and 10.)

\$-----

00

Dollars only

OR

☐ None

O 0 0 0 0 0

F 1 1 1 1 1

F 2 2 2 2 2

I 3 3 3 3 3

I 4 4 4 4 4

C 5 5 5 5 5

E 6 6 6 6 6

C 7 7 7 7 7

U 8 8 8 8 8

S 9 9 9 9 9

E A A A A A

Form C

9. What was this person's total income in 1974?

☐ None
☐ Loss

☐ \$1 to \$499
☐ \$500 to \$999

☐ \$1,000 to \$1,999
☐ \$2,000 to \$3,999

☐ \$4,000 to \$5,999
☐ \$6,000 to \$7,999

☐ \$8,000 to \$9,999
☐ \$10,000 to \$11,999

☐ \$12,000 to \$14,999
☐ \$15,000 to \$19,999

☐ \$20,000 to \$24,999
☐ \$25,000 to \$34,999

☐ \$35,000 to \$49,999
☐ \$50,000 or more

Include wages or salary before deductions for taxes, dues, or other items; income from business or farm (net after operating expenses); and income received regularly from any other source.

Exclude lump sum amounts such as gains from the sale of property.

See instructions for question 9 on page 4.

Form D

18. Earnings in 1974. Fill parts a, b, and c for everyone who worked any time in 1974 even if they had no income. If exact amount is not known, give best estimate.

a. How much did this person earn in 1974 in wages, salary, commissions, bonuses, or tips from all jobs?

\$-----

00

(Dollars only)

OR ☐ None

b. How much did this person earn in 1974 from own nonfarm business, professional practice, or partnership?

\$-----

00

(Dollars only)

OR ☐ None

c. How much did this person earn in 1974 from their own farm?

\$-----

00

(Dollars only)

OR ☐ None

19. Income other than earnings in 1974. Fill circles and enter appropriate amounts. If exact amount is not known, give best estimate.

During 1974 did this person receive any income from the following items?

If "Yes" to any of the items below — How much did this person receive?

a. Interest

☐ Yes

☐ No

Dividends

☐ Yes

☐ No

Net rental income

☐ Yes

☐ No

\$-----

00

(Dollars only)

If lost money, write "Loss" above amount

b. Social Security or Railroad Retirement

☐ Yes

☐ No

\$-----

00

(Dollars only)

c. Supplemental Security Income from Federal or State Governments

☐ Yes

☐ No

Aid to Families with Dependent Children

☐ Yes

☐ No

Other public assistance

☐ Yes

☐ No

\$-----

00

(Dollars only)

d. Unemployment compensation

☐ Yes

☐ No

Veterans' payments

☐ Yes

☐ No

Government employee pensions

☐ Yes

☐ No

Private pensions or annuities

☐ Yes

☐ No

Any other sources of regularly received income

☐ Yes

☐ No

\$-----

00

(Dollars only)

20. What was this person's total income in 1974?

Add all entries in questions 18 and 19.

\$-----

00

(Dollars only)

OR ☐ None

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would be reported and the more valid the statistics would be. Because of space constraints, any income question on the short form would have to be less detailed. Form D asked respondents to enter specific dollar amounts for 3 categories of earnings and for 4 categories of income other than earnings, and to mark "Yes" or "No" circles for 12 sources of income other than earnings. A specific total-income entry was included to aid census clerks in the editing of income responses.

The form A short-form income question required "Yes" or "No" answers to the receipt of six types of income. In addition, there was a total-income question with 16 response categories.

The form B short-form income question required respondents to write in specific dollar amounts for six sources of income and for total income.

The form C short-form income question asked only for total income and required that the respondent fill 1 of 16 circles to indicate the appropriate interval in which his/her income fell.

From the test results it was concluded that form A was preferable, purely from the standpoint of better income data, relative to form D, but the form C question was deemed viable and had the advantage of requiring less space on the short-form questionnaire than form A. The form B version had the major drawback of requiring hand-coding, which is very costly and time-consuming. Further testing of the income question alternatives was conducted in the National Mail Income Pretest and other tests.

Although testing proved the feasibility of collecting income data on a 100-percent basis, the desire to reduce respondent burden and to cut costs led to a decision in late 1977 to drop the income question from the short form and include it only on the long-form questionnaire. This led to the implementation of the differential sampling rate described in the Richmond, VA area. (See fig. B for the final 1980 census version of the income question.)

National Mail Income Pretest

In May 1975, the Bureau conducted a national test of the four income questions tested in Salem County, NJ, using a sample of 19,700 housing units. Questionnaires were mailed to each housing unit in the sample on May 8, with about one-quarter of the units receiving each of the four variant forms (A, B, C, and D). Householders were asked to complete the forms and mail them to the Bureau's processing center in Jeffersonville, IN, where they were edited and followed up by a telephone call or in the field, when necessary. A subsample of nonresponse cases was assigned to current survey interviewers for followup. Final processing work on the test was completed in late August.

The major concern, as in Salem County, was the extent to which variants A, B, and C measured income in relation to variant D. The study showed that the differences between the versions were slight and not statistically significant. The conclusion from the test was that the cost of using form B in terms of questionnaire space and the time and cost involved in hand-coding were unwarranted, since it was likely that the data from either form A or form C would provide nearly as accurate income statistics. Since A required more space than C, it was decided to further test the items. In subsequent tests, version C was changed slightly to list in the question the most important sources of income the respondent should consider in filling in the total-income circles.

Figure B. 1980 Census Income Question

32. Income in 1979 —

Fill circles and print dollar amounts.

If net income was a loss, write "Loss" above the dollar amount. If exact amount is not known, give best estimate. For income received jointly by household members, see instruction guide.

During 1979 did this person receive any income from the following sources?

If "Yes" to any of the sources below — How much did this person receive for the entire year?

a. Wages, salary, commissions, bonuses, or tips from all jobs . . . *Report amount before deductions for taxes, bonds, dues, or other items.*

☐ Yes → \$.00
☐ No (Annual amount — Dollars)

b. Own nonfarm business, partnership, or professional practice . . . *Report net income after business expenses.*

☐ Yes → \$.00
☐ No (Annual amount — Dollars)

c. Own farm. . .

Report net income after operating expenses. Include earnings as a tenant farmer or sharecropper.

☐ Yes → \$.00
☐ No (Annual amount — Dollars)

d. Interest, dividends, royalties, or net rental income . . .

Report even small amounts credited to an account.

☐ Yes → \$.00
☐ No (Annual amount — Dollars)

e. Social Security or Railroad Retirement . . .

☐ Yes → \$.00
☐ No (Annual amount — Dollars)

f. Supplemental Security (SSI), Aid to Families with Dependent Children (AFDC), or other public assistance or public welfare payments . . .

☐ Yes → \$.00
☐ No (Annual amount — Dollars)

g. Unemployment compensation, veterans' payments, pensions, alimony or child support, or any other sources of income received regularly . . .

Exclude lump-sum payments such as money from an inheritance or the sale of a home.

☐ Yes → \$.00
☐ No (Annual amount — Dollars)

33. What was this person's total income in 1979?

Add entries in questions 32a through g; subtract any losses.

\$.00
 (Annual amount — Dollars)

If total amount was a loss, write "Loss" above amount.

OR ☐ None

Rural Listing Test

In the fall of 1975, the Bureau tested three alternative prelisting procedures in each of three areas in the rural South. The extension of the mailout/mailback census method required an improvement of listing procedures for rural areas. Prelist is an operation in which address lists are constructed for mail census areas for which no computerized geocoding files and/or commercial mailing list is available. Census enumerators travel through an area listing the address of each unit they find. The purpose of the test was to determine which of three procedures was best in terms of cost and housing-unit coverage.

Test offices were opened in mid-August 1975, in Yellville, AR, to cover Marion, Searcy, Stone, and Van Buren Counties; in Ruston, LA, for Bienville and Jackson Parishes; and in Mendenhall, MS, for Jefferson Davis, Covington, and Smith Counties. Separate areas were selected to allow representative readings across the various types of areas to be prelisted for the 1980 census. Contiguous counties were selected in each of the three areas, which had a total 1970 population of 102,000. Several factors were considered in choosing the test sites. First, the test was restricted to the South because most of the 1980 prelist workload would be there, and because the region was believed to have had the highest total missed rate for housing units in 1970. Most of the rural South had been enumerated with conventional door-to-door methods in 1970, but was targeted for mailout/mailback procedures in 1980. Second, since the undercoverage of the Black population in 1970 was greater than for the White, areas were selected (except for the Arkansas counties) that had enough Black persons to see if coverage differences between procedures would vary by race. Third, since the focus was on rural areas, counties with places of 5,000 or more people were excluded. Fourth, counties where any of the Bureau's ongoing sample surveys were taking place were also omitted to avoid putting an undue burden on certain households. Finally, because of cost and administrative considerations, all the test counties were within the boundaries of one Census Bureau regional office.

The three listing procedures tested in the Rural Listing Test were:

- P1—Inquire when necessary—Enumerators tried to obtain addresses by observation or from neighbors. When they sought address information from a resident of a unit, they also attempted to get addresses for nearby units. This procedure was similar to that used in 1970.
- P2—Inquire at every structure, limited callbacks—Enumerators knocked on every door to obtain address information from the householders. If no one was home, they tried to obtain information by observation or from neighbors, or failing this, a single callback to the address was allowed.
- P3—Inquire at every structure, unlimited callbacks—Enumerators inquired at every structure, as with P2. They were allowed to make several return visits to a housing unit until they found someone at home. Neighbors or observation were used only as a last resort.

All three procedures incorporated changes from 1970 that were designed to improve coverage. These included a structured path of travel (canvassing one block at a time) for enumerators

and a post office check of the address lists for completeness and accuracy.

Each test area was completely and independently listed twice, once with a crew of enumerators using method P1 and once with a second crew using P2. The P3 listing was then simulated by making additional callbacks for P2 address listings that had been obtained from neighbors or by observation. In Louisiana and Mississippi, the P1 canvass was conducted first; in Arkansas, the P2 canvass was first.

Results of the test led to a recommendation that P2 (inquire at every structure, with limited callbacks) be used to prelist rural areas for the 1980 census, and this was done. Coverage was better with both P2 and P3 than with P1 (by 2.1 percent and 2.4 percent, respectively) but P3 did not provide enough additional coverage to offset the increased cost per net listing using that procedure. P3 cost 26.4 percent more per net listing than P1, and P2 cost only 7.5 percent more than P1. The test also showed that the amount of improvement from a postal check of the prelist address lists was large enough (at least 4.2 percent in each of the three areas) to make such checks desirable operations for 1980. The prelisted addresses for the census underwent two post office checks in the spring of 1980, but not an advance check in 1979, as had been proposed. Coverage differences between the three procedures in the Rural Listing Test did not vary significantly by race.

A quality control operation of the listings in a sample of enumeration districts (ED's) was tested to see what effect it would have on improving coverage. A quality control crew leader listed a string of 25 housing units in each ED. These 25 addresses were then matched to completed address registers for the ED. If a certain number of the 25 addresses were found not to be listed in the address registers, the ED was rejected and recanvassed. The results of the test showed that the quality control operation was useful in identifying poorly listed ED's. This quality control check of the prelist operation was instituted, in a slightly different form, for the 1980 census.

Pima County, AZ, Special Census

A special census of Pima County, AZ, conducted as of October 20, 1975, served as the test site for several 1980 census proposals. Two of these—the feasibility of operating computer terminals in the district offices in 1980 and the utilization of local officials to review preliminary population and housing counts—had already been tested in San Bernardino County, CA. The third—the use of local, noncensus name lists (“nonhousehold source” lists) to improve coverage—was tested for the first time. As in San Bernardino County, the costs of the special census itself were covered by the county, and the Bureau assumed the costs for the tested proposals. A district office was opened in Tucson.

The second test of computer terminals in a district office involved improvements in the basic procedures used in San Bernardino County. The experience with maintaining the equipment was unsatisfactory, however, and it was perceived that maintenance could be one of the major problems in the use of district office terminals in 1980.

Pima County governmental jurisdictions were generally pleased with the Bureau's local review program. As in San Bernardino County, door-to-door enumeration methods and the absence of

a mailing list meant that precensus address counts were not available. Local officials compared postcensus preliminary population and housing-unit block counts derived from the census with their estimates based on aerial photographs, field canvassing, vacancy rates, and housing-unit densities. The local officials believed that the 10 days allowed for review was not enough time to check the figures adequately.

In the test of a new coverage-improvement program, the Bureau undertook to check local lists of names and addresses against the Bureau's address registers to determine the efficacy of using such lists to identify persons who may have been missed in the census. About 2,700 names and addresses of mostly Spanish-origin persons were obtained from four local sources; these were largely lists of persons who had sought aid or assistance from various community organizations. Each name and address was matched to the census address registers, and nonmatches (names on the local lists that did not appear on the census register) were followed up. The check discovered that about 6 percent, or 160, of the individuals on the lists had not been enumerated on Census Day. In addition, in the process of following up those persons on the lists, 231 other people not on the lists were also found not to have been enumerated. The check yielded an increase of about 0.5 percent to the Spanish-origin population in the special census.

Tape Address Register Development Test

Columbus, OH, was selected as the site for a test of certain issues related to creating mailing lists in tape address register (TAR) areas. TAR areas were city-delivery areas in urban centers where the initial mailing lists were on computer tapes purchased from commercial vendors.¹³ In TAR areas, most addresses were geographically coded (geocoded) by computer. This geocoding operation required, in addition to purchased address files, computerized geographic base files (GBF's) that contained the geographic codes for specific address ranges. In 1970, city postal delivery areas covered by geocoding files in 145 SMSA's were TAR areas; it was proposed that for 1980 such areas be TAR areas in all SMSA's.

The Tape Address Register Development Test was designed to evaluate techniques for geographically coding address files and to study methods for updating the 1970 tape address files. Specifically, the test examined the feasibility of updating the 1970 address registers for Columbus, OH, by adding new addresses from four commercial sources, subjecting the list to a post office check, and geographically coding the updated list. The quality of the four commercial address sources was evaluated and two different geocoding techniques were tested in the fall and winter of 1975-76.

Based on this test and other experiences, the decision was made to expand the number of TAR areas to encompass all SMSA's for which there were workable geocoding files. However, an update of 1970 address files was part of the process in only a handful of SMSA's, and was never the sole means of compiling a 1980 list.

¹³Areas for which computerized lists could not be purchased were called "prelist" areas and were discussed in relation to the Rural Listing Test. See ch. 3 for a detailed discussion of TAR and prelist areas.

Travis County, TX, Pretest

The first major pretest for the 1980 census was conducted in Travis County, TX, in the spring of 1976. Census Day was April 20; the district office, located in Austin, opened in late January and closed in mid-September, about 2 months behind schedule. Unlike the tests that preceded it, the Travis County pretest was a minicensus, involving the use of the field and office procedures that were proposed for 1980. The major purpose of the test was to examine field enumeration procedures and organization, including coverage-improvement techniques, and other proposals for the 1980 census. The mailout/mailback census technique was used; questionnaires were mailed to households a few days before Census Day and respondents were asked to return the forms by mail on Census Day. Households that did not return their questionnaires were visited by census enumerators.

Travis County was chosen as a pretest site because: (1) there was a corrected and updated geocoding file for Austin that allowed the coding of addresses from a commercial mailing list, (2) the county, which had about 373,000 people according to the test results, fell within the population range deemed suitable for testing purposes and called for by the available budget, and (3) the test area had substantial Black and Spanish-origin populations—Travis County was 10.7 percent Black and 15.6 percent Spanish-origin.

Close attention was given in this and subsequent major pretests to the rate at which householders cooperated by mailing back their questionnaires to the census office. The higher the mail-return rate, the less time and money are spent in following up on nonresponse households to obtain information.¹⁴ The overall mail-return rate for occupied housing units in Travis County was 78.4 percent—79.0 percent for short-form questionnaires and 75.7 percent for long forms.¹⁵

The questionnaires used in Travis County were similar in content to those used in 1970; the major changes were the inclusion of questions on income and Spanish origin on a 100-percent basis. Three types of questionnaires were used—two short forms, each distributed to about 40 percent of the households, and one long form, which went to about 20 percent of the households. The short-form versions differed in several respects: one offered more detailed categories under the Spanish-origin item¹⁶; one version asked respondents to give their total income (similar to form C in the Salem County and National Mail Income Pretests), but the other also included questions on the sources of earnings and income (similar to form A in the Salem County and National Mail Income Pretests); one short form contained a question on complete plumbing facilities, while the other had three separate

¹⁴In this publication, the mail-return rate is figured by dividing the number of questionnaires returned by the total number of occupied housing units. When calculated this way, the mail-return rate is generally considered a measure of public cooperation with the census. Another way is by dividing the number of questionnaires returned by the total number of questionnaires mailed out. Here the numerator of the calculation remains the same, but the denominator includes both occupied and vacant units, as well as nonexistent units to which questionnaires were sent. Figured this way, the mail-return rate is always lower and serves as a measure of the field followup workload, because during enumeration, nonresponding occupied units, vacant units, and some nonexistent units must be followed up in the field.

¹⁵According to results memorandum 21; results memorandum 8 had given the rates as 81.1, 81.8, and 80.8, respectively.

¹⁶See also discussion under "Oakland, CA, Pretest" below.

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questions on hot and cold piped water, flush toilets, and bathtubs or showers. No formal testing of questionnaire content was planned for the Travis County pretest, although evaluations were conducted on the accuracy of answers to the questions on average monthly utility costs, mortgage status, and yearly real-estate taxes, certain employment questions, and the different versions of the plumbing facilities question.

Spanish-language questionnaires, prepared by Bureau staff, were made available, in addition to those in English. This innovation was designed to improve the coverage of Spanish-origin persons who might not be able to understand the questionnaire in English. The main question for the pretest was how the forms would be distributed. Members of the Census Advisory Committee on the Spanish Origin Population had suggested that bilingual questionnaires be designed or that Spanish-language questionnaires be sent to all households, but because these approaches posed problems in terms of costs, field and processing operations, and public reception, the Census Bureau devised another means of distribution. All households were mailed an English-language questionnaire with a message in Spanish instructing respondents that if they wanted a Spanish-language form sent to them, they should either call the telephone assistance number printed on the questionnaire label and ask for one, or mark the appropriate box on their English-language form and mail it back so one would be sent. In Travis County, Spanish forms were not used by followup enumerators (though they were in later pretests and in 1980); however, bilingual enumerators were sent to enumerate Spanish-speaking households that did not return a form and answers were recorded on regular questionnaires. The number of requests for Spanish-language questionnaires was very low—only 50 out of over 15,000 households with a Spanish-origin householder.

Mailing lists for the Travis County pretest were created using a combination of two methods. For most of the Austin city-delivery area, a commercial address list was purchased. This list underwent three checks by the Postal Service, including an advance post office check in November 1975, another check in the early spring of 1976, and one performed the day the questionnaires were delivered to respondents. In addition, the list was checked for completeness by census enumerators in late February and early March in an operation called "precanvass." Precanvass occurred several weeks before Census Day and involved an in-the-field canvass in which workers updated the purchased mailing list, which had been geocoded, by adding missed units and correcting geographic codes.

Limited use had been made of the prec canvass operation in the 1970 census; it was employed only in selected tracts in 17 large SMSA's. Precanvass was expanded in the Travis County pretest to the entire area covered by the commercial mailing list and the geocoding file. The operation added 1.7 percent to the housing-unit coverage that would not have been added by other operations. In addition, prec canvass did a very good job in detecting and correcting geocoding errors.¹⁷

In parts of Travis County not covered by the commercial mailing list and the geocoding file, census listers were sent into the field to compile addresses in a "prelist" operation. It was decid-

ed to use the Travis County prelist experience to compare the effects on coverage of an early listing (in October 1975) as opposed to a late listing (late February and early March 1976). It was assumed that the late listing would more accurately reflect the housing-unit composition at the time of the census, particularly in rural areas where names are an essential part of a mailing address. Results of the study showed that there may be lower coverage with an early listing than with a later listing, particularly in more rural areas. The difference in coverage for occupied housing units was estimated at about 1.0 percent for the entire test area and about 1.9 percent for rural areas. These differences might have been offset if an advance post office check had been conducted along with the early listing. The early and late listings were compared again in the Rural Relist Test.

In addition to the use of Spanish-language questionnaires, the evaluation of the prec canvass operation, and the test of alternative prelist procedures, various other techniques to improve coverage were tested in Travis County. One of these was a procedure tried earlier in the Pima County, AZ, special census to check independent lists of names (nonhousehold sources) against census records. The program was aimed at reducing the differential between the undercounts of Whites and minorities. About 2,300 drivers' license records for males, ages 17-35, who lived in two ZIP Code areas of Austin, TX, that contained large concentrations of Blacks and Hispanics were checked against the Bureau's address registers. In addition, several community organizations in Austin supplied a total of 660 names and addresses that were also checked. These lists were matched with the census records and persons who had not been enumerated were added to the census counts. (Additions to the counts were not actually made, but were simulated in this test.) In addition to the persons on the lists, other persons were also discovered not to have been counted. In Travis County, about 7 percent of the names on the lists would have been added to the counts. The drivers' license list yielded more added persons (taking into account those on the list and those picked up during the search) than the organization lists, about 11 percent and 8 percent, respectively. If the adds had actually been made, the counts for Black and Spanish males, ages 17-35, in the two ZIP Code areas would have increased 3.6 percent—3.3 percent for Blacks and 3.9 percent for the Spanish-origin males. This program was studied again in later pretests.

Another coverage improvement method tested was a check to see if persons who filed a change-of-address order with the Postal Service 1 month before or after Census Day had been enumerated. This procedure had been used in limited areas in the 1970 census and resulted in an increase in the population of only 0.06 percent. As a way of improving the operation, two approaches for following up movers by mail instead of by personal visit were tested. The results from Travis County showed an increase of only 0.01 percent to the population count. The "movers" operation remained a part of census planning through most of the test period, but a decision was made not to employ this coverage-improvement device in 1980 because it was not cost-effective and because the vacancy check duplicated the efforts of the postenumeration phase of the movers check.

In 1970 about 1 million people were added to the census count as a result of the National Vacancy Check, a large-scale sample program developed during that census to resolve the problem of an unexpectedly high vacancy rate which was believed to be erroneous. For 1980, it had been suggested that a followup check

¹⁷Coverage improvement procedures tested in the San Bernardino County, CA; Pima County, AZ; Rural Listing; Travis County, TX; and Camden, NJ; tests are discussed in the unpublished paper "Plans for Coverage Improvement in the 1980 Census," August 1978, by Peter Bounpane and Clifton Jordan.

of housing units with no reported population be conducted as a normal part of census operations while the district offices were still open. Various methods for conducting this check were tested in Travis County. Among the findings was that 7.5 percent of the units classified by enumerators as “vacant” or “nonexistent” were actually occupied; this represented a potential coverage loss of 0.67 percent of the population—results comparable to the 1970 census. The “vacancy/delete check,” or unit status review, was tested further and eventually employed in the 1980 census.

In an effort to help respondents fill out their questionnaires, three types of assistance centers were used in Travis County, and their relative effectiveness was tested. The most successful type was the telephone assistance center in the census district office, which took calls from 8 a.m. to 11 p.m. for 8 days after Census Day; the telephone assistance number was printed on questionnaire labels. Stationary community walk-in centers and mobile vans (also operating for 8 days after Census Day) received less traffic; this was attributed to the lack of publicity about their locations and hours of operation. It was especially difficult to inform the public of the whereabouts of the vans. All three types of assistance centers were tested again in the Camden, NJ, pretest.

The first full-scale test of the local review program was undertaken in Travis County. (Earlier tests had been conducted as part of the San Bernardino County, CA, and Pima County, AZ, special censuses.) Local officials were asked to review address list counts of housing units prior to enumeration and preliminary population and housing unit counts after Census Day. During the preenumeration phase, some of the jurisdictions replied that they did not have sufficient time or suitable counts of their own with which to conduct a check. Those that did reply were generally pleased with the conduct of the census and in only a couple of cases were discrepancies in the counts noted. Building permits were the chief source used by local officials, but septic system records, tax rolls, and other sources were also used. No responses were received from local officials in the postenumeration phase.

A broad public information effort was undertaken in Travis County, involving representatives of the Bureau’s Public Information Office, two community services representatives from the Bureau’s Dallas regional office, the district office manager, and others. The theme for the pretest was “Everyone Counts,” and posters bearing this slogan in English and Spanish were distributed. Brochures directed toward the Black and Spanish-origin communities were issued, as were flyers for elementary school children to take home to their parents, factsheets for the news media, and recruiting posters in both English and Spanish. There were spot announcements for both television and radio. Bureau representatives appeared on a number of television and radio shows, including those oriented to the minority communities.

Various other new procedures for field and office work were examined. These included the delivery of mail-returned questionnaires from the post offices to the district office on a daily basis and a quicker start than in 1970 on the followup of housing units from which questionnaires were not returned. The feasibility of geographically coding responses to the place-of-work question in the district office instead of in a central processing center was tested on the assumption that local knowledge would contribute to more complete and accurate coding. While the operation pro-

duced fairly high quality, it was apparent that local knowledge did not lead to significantly more detailed answers, and that district office coding took longer than anticipated to complete. Place-of-work coding (which was also tried in the Camden, NJ, pretest) was, therefore, not conducted in the district offices in 1980, but was done in the processing centers as in 1970. Tests continued on the practicability of entering census counts into the Bureau’s main computer from a terminal in the district office. Various procedures for counting persons residing in “special places” (military installations, college dormitories, hospitals, etc.) were also tested.

Data Collection Unit Test

The basic unit of enumeration is the enumeration district (ED), which contains, on the average, enough housing units to comprise the workload of one enumerator. (An ED’s boundaries are also fixed by the limits of political and statistical entities.) The experience in previous censuses had indicated that when ED boundaries do not coincide with recognizable land features, there is a potential coverage loss. This occurs when an enumerator fails to list or count a housing unit that he or she mistakenly believes is in another ED. Also, geographic misallocations, double counting, or other related problems can occur when enumerators go outside the boundaries of their ED’s. In an effort to test ED’s constructed from natural, easily recognizable boundaries, the Data Collection Unit Test was conducted in Gallia and Meigs Counties, OH, in the spring of 1976. A district office for the test area (which included about 45,000 people) was opened in Gallipolis, OH, in April.

The traditional ED respects all boundaries that form data tabulation areas; that is, an ED is the area formed by intersections of all these boundaries. Data collection units, formed for this test, respected county and place boundaries, but they were not limited by other political or statistical boundaries as ED’s are. Wherever possible, the data collection units were designed to follow natural features (such as roads) and their size was generally determined only by an optimum number of housing units for a followup enumerator’s assignment. Political or statistical boundaries which bisected the data collection unit were used to create block groups, which became the basic tabulation units.

The purpose of the test was to determine whether ED’s or data collection units produced better housing-unit coverage and geographic allocation of addresses and to see which was more cost-effective. There was nothing in the results of the test to indicate that data collection units should be preferred to ED’s; the latter were used in 1980.

National Content Test

The National Content Test (NCT) and NCT reinterview were conducted to collect information on respondent answers to proposed new or modified census questions, to compare responses to alternative versions of certain questions, and to measure reporting errors associated with some of these questions. A national sample of about 28,000 housing units was divided into two panels representative of the U.S. population and of nearly equal size. Two questionnaires containing variant wordings or formats for some questions were developed for testing, and one questionnaire was randomly assigned to each panel. Question-

naires were mailed in early July 1976 from the Bureau's processing center in Jeffersonville, IN, and were to be completed and returned by mail to Jeffersonville. Followup by personal interview of households that did not mail back a questionnaire or whose questionnaire failed edit was conducted by the Bureau's regional offices' current survey interviewers.

About 2,300 households from each of the two NCT panels were selected as the sample for the content reinterview, conducted from mid-September to mid-October 1976, using direct personal visits by trained current survey interviewers. The reinterview questionnaire asked detailed questions on relationship, ethnic origin or descent, language, education, disability, and place of birth. Results of evaluations conducted during this test were used in conjunction with other studies to determine the final wording and format of 1980 census questions.

The primary purpose of the NCT reinterview questions on disability was to test the accuracy of the responses to the disability questions asked in the NCT. Answers to the NCT and reinterview disability questions were compared, and the degree to which the responses agreed was taken as a measure of the accuracy of the response to the NCT question. A substantial number of people who responded in the NCT that they were disabled answered that they were not disabled when reinterviewed, and vice versa. Of six activity areas for which questions were asked about limitation, the inconsistency was least for the activity "working at any job or business" and highest for "doing regular schoolwork." The number of persons disabled was also lower than what was expected based on independent estimates. Despite evidence of the inaccuracy of the responses to the disability question in the NCT and subsequent tests, demands for disability data remained great and an item focusing on the ability to work and to use public transportation was included on the 1980 census questionnaire.

With regard to questions on school enrollment and educational attainment, the NCT results provided evidence of the desirability of making several changes to these questions. The following changes were subsequently incorporated into the 1980 census questionnaire: The redesignation of "parochial" schools as "private, church-related," an instruction to those who finished high school by taking an equivalency test (such as the General Educational Development test) to mark grade 12, and making the highest college-year category "8 or more" instead of "6 or more" as in 1970. Answers to a question on highest degree received proved reliable, but the question was not included in the 1980 census because of space limitations. Answers to the vocational education questions on the NCT and the reinterview were relatively inconsistent and, thus, a question on vocational education was not included on the 1980 questionnaire.

The final format of the 1980 census place-of-birth question was based in part on the results of the NCT. Improvements were made which were designed to eliminate the two major problems with this item in 1970. One of these was that many respondents did not follow the instruction to name the State in which the mother lived when the respondent was born (rather than the location of the hospital). In the NCT, two different questions were used. One asked "Where was this person born?" and placed in a prominent position the instruction to report the State where the mother lived when the respondent was born. The other asked "Where was the mother of this person living when this person was born?" There were a number of difficulties with the latter

query and the decision for the 1980 census was to use the former approach. The other problem in 1970 concerned the design of the answer space. Respondents either could mark a circle for "This State" (the State where they resided) or write in another State; many respondents mistakenly gave their State of current residence rather than their place of birth (when these were different). Thus, for the NCT, the answer space was redesigned; the circle for "This State" was eliminated and all respondents were asked to write in their place of birth. This feature was retained for the 1980 questionnaire.

Among other questionnaire items tested in the NCT were income, language, race, ethnic origin, relationship, sex, age, and employment.

Camden, NJ, Pretest

The second major pretest was conducted in Camden, NJ, for the primary purpose of testing certain coverage-improvement techniques in a hard-to-enumerate area. The characteristics of a number of cities were analyzed in the process of selecting a site for the test. Camden was chosen because about 48 percent of the population was Black and 16 percent Spanish, and about 50 percent of its area was considered difficult to enumerate.

A district office was opened in June 1976 and a permanent Census Bureau employee was chosen to run it. Census Day was September 14. The office did not close until March 1977, over 2 months behind schedule, due mainly to lags in the followup operations and to a protracted local review of the preliminary counts.

Mailout/mailback census procedures were used in Camden as they had been in Travis County. Only about 50 percent of the households mailed back their questionnaires, significantly fewer proportionally than in Travis County. This return rate was lower than expected and, thus, meant a heavier followup workload. Team enumeration was tested as a technique that could improve coverage in certain areas enumerators might be wary about entering. This technique had been utilized in several of the tests prior to the 1970 census and in the census itself, but no formal evaluations of its effect were conducted. A study was designed for Camden to evaluate the effect of team enumeration relative to individual enumeration on coverage and the quality of the completed work. Each census tract in the test area was divided into three parts, and each part was designated to be enumerated by one of three methods—enumerators working alone, enumerators working in pairs, or coverage of an area by an entire crew or team of enumerators. With the pair technique, each enumerator went to separate households but had the assurance that the other enumerator was close at hand. With the crew technique, each member of the crew enumerated nearby households separately and was under the direction of a crew leader who was responsible for making the assignments. The results of the study of team enumeration techniques revealed that either of the team methods produced better quality than single enumeration, and in both procedures production was slightly below that of the single method. Crew enumeration led to slightly better production rates than pair enumeration, but the quality of the work under the latter procedure was higher. Subsequent to this test, it was decided to use team enumeration in 1980 at the discretion of regional census managers to "clean up" specified difficult-to-enumerate areas; this was essentially the same approach used in 1970.

Chapter 2. Planning the Census

The Camden pretest questionnaires were basically the same as those used in Travis County. Two short-form questionnaires, containing the differences described in the Travis County forms, were each distributed to about 40 percent of the households. A long-form questionnaire was sent to the remaining 20 percent of households. Spanish-language questionnaires were available under the same procedures as in Travis County—by telephone request or upon mail return of the uncompleted English-language questionnaire. Requests for these translated forms were again minimal—133. Camden had about 3,600 households with a Spanish-origin householder in 1976.

The three types of assistance centers—telephone, walk-in, and mobile van—that had been used in Travis County were used again in Camden, though with some slight differences. The centers were open, generally, from September 10-24, although the vans and walk-in centers did not operate on Sundays and telephone assistance lines were not open the second Sunday in this period. One of the walk-in centers, situated at city hall, remained there; the location of two others changed daily, but their schedules were never fully or accurately publicized. One mobile van was used. The number for the telephone assistance center was printed on the questionnaire label. Unlike Travis County, where the telephone assistance operation was most successful, in Camden the walk-in centers produced nearly three-fourths of all contacts with the public. The stationary center at city hall had the most contacts, in part because it was in a convenient location where there was heavy pedestrian traffic.

The mailing list for the Camden test was created by purchasing a commercial list and subjecting it to three post office checks—an advance check about 5 months before Census Day, another check 2-3 weeks prior to Census Day, and a third at the time questionnaires were delivered. In addition, the list was updated in the field by census enumerators in the prec canvass operation.¹⁸ The effectiveness of the prec canvass operation in terms of improving coverage and geographic coding was again evaluated. In Camden, the percentage of housing units added to the address register by prec canvass exclusively was 2.3 percent, compared with 1.7 percent for Travis County; if the procedures for the operation had been carried out as planned, the net add rate could have been 3.9 percent. For instance, a number of units that should have been added were not; one reason for this was that prec canvass corrections clerks had difficulty matching apartment designations from the prec canvass address registers to those in the master address registers, thus failing to add appropriate unit listings to the latter. As in Travis County, net add rates by census tract were examined to see in which areas—Black, Hispanic, difficult-to-enumerate, etc.—the add rates were higher. No clear-cut pattern emerged in the Travis County test, but in Camden the add rate in Hispanic tracts was lower than in non-Hispanic tracts.

The use of nonhousehold source lists to improve coverage was also tested in Camden. The primary source of names was a drivers' license list, as in Travis County; lists were also obtained from two community organizations. Unlike in Travis County, where only names and addresses of males in a certain age group in two minority-populated ZIP Code areas were taken from the drivers' license list, in Camden both sexes and all age groups

across the entire city were included. All males 25-44 on the drivers' license list were in the sample, as were 1 in 10 of all the other males and 1 in 12 of the females. In all, about 6,100 cases were processed and, as a result, 521 persons—371 of those on the lists and 150 persons not on the lists but located during the search—were found to have been missed in the census. The added persons represented about 0.5 percent of the total population of Camden as compared with 0.7 percent for the two ZIP Code areas covered in Travis County. It was estimated that processing all drivers' license records for Camden would have improved the census count by 2 percent, and would have increased the figures for Spanish males age 17 and over by 6.9 percent and Black males age 17 and over by 3.1 percent. The yield rate (missed persons as a percent of cases processed) for the drivers' license file was about 8.3 percent and did not differ significantly for the three age/sex groups included in the sample. The results of the Travis County and Camden tests indicated that drivers' license lists were a more desirable independent list than community organization lists because they produced a higher yield rate, were easier to obtain, and were computerized.

Another study was conducted to see if the 1970 address registers could be matched to the commercial list of addresses purchased for Camden to improve housing-unit coverage. Housing units found to have been missed as a result of this match represented 0.4 percent of the Camden housing-unit count, including 0.3 percent of all occupied units and 0.8 percent of vacant units. The people who lived in the missed occupied housing units were about 0.2 percent of the Camden population. It was discovered that about 40 percent of the missed housing units should have been added by the prec canvass operation, a finding which indicated that the yield from the 1970 address register match would be cut about in half if the prec canvass were conducted correctly.

Several efforts were made to publicize the census and to mobilize the public to support it. One of these was the creation of a complete-count committee, modeled after a similar group set up in Detroit in 1970. The Camden test was the first use of this device in planning for the 1980 census. The Camden committee, which was picked by the mayor, undertook a number of projects helpful in publicizing the census. Members discussed the census before a number of organizations in the city. The committee encouraged local religious leaders to stress the importance of the Camden census to their congregations, either from the pulpit on a designated day or in church bulletins or newsletters. The committee was very effective in distributing posters and flyers to schools; children took some of the flyers home to their parents, while others were included with the paychecks of school system employees. Members of the committee also passed along word about the availability of census jobs to people in their organizations. One member, who represented a Camden radio station, assured that census spot announcements were aired. While the committee was of help in spreading awareness of the census, there was a lack of written guidelines from the Bureau, and efforts were made to provide these for subsequent tests.

As in Travis County, a community services representative (CSR) was assigned to the Camden area to carry out various functions related to publicity, community organization, and community outreach. The CSR for Camden served as liaison between the district office and the complete-count committee. In addition, the CSR made personal visits to community leaders, organiza-

¹⁸Since the test area was limited to the city of Camden, all of which was covered by the commercial list, it was not necessary to conduct a prelist operation such as was described for Travis County.

tions, and agencies, explaining the importance of the census and the need for local support, obtaining commitments for space, assistance, and publicity, and aiding the recruitment of census workers, among other things.

The Bureau's formal public information campaign in Camden utilized both the print and electronic media and distributed an average of one piece of informational material for each person in the city. Nine news releases and 17 radio and television spot announcements were sent to various news outlets. Bureau representatives appeared on a number of radio and television programs, including Black- and Puerto Rican-oriented shows. The informational material included posters, brochures, flyers, and a handout on confidentiality and data use.

A small-scale sample survey was conducted in Camden to evaluate the relationship between contact with the public information campaign and cooperation with the census. Respondents' demographic characteristics, knowledge, and attitudes were also examined as factors that affect cooperation. Respondents reported that of the six channels of communication studied, they remembered hearing about the census most often from newspapers, followed by: conversations with friends, acquaintances, and coworkers; television, and, to a lesser extent, radio; posters and handbills; and presentations at meetings of community groups. (The local television stations were based in Philadelphia, PA, so the census did not receive as much attention as it would during the 1980 enumeration.) The study supported the hypothesis that contact with the public information campaign led to increased cooperation with the census (in terms of mailing back questionnaires) and cooperation increased with the number of sources through which exposure to census information was reported. Mail-return rates were significantly higher for those who had heard about the census before they received a questionnaire, but since almost half of the respondents reported no such contact, the components of the questionnaire mailing package were seen as important publicity channels. To determine respondents' knowledge about the census, they were asked who was responsible for conducting the Camden census, whether they were familiar with confidentiality provisions, whether they knew when the next decennial census would be taken, and whether they knew that answering census questions is mandatory. There was a significant association between the level of knowledge and cooperation; and the greater the contact with the public information campaign, the more likely the respondent was to give a correct answer to the four questions. There was only a weak association between attitudes toward the census and mail response. With regard to respondent characteristics, three variables—the number of years the respondent lived in Camden, the number of years lived in the neighborhood, and age—were significantly related to cooperation. A fourth variable—sex—did not appear to be related.

As previously mentioned, a major innovation planned for the 1980 census was the local review program. Its purpose was to provide detailed census counts and maps to the local authorities for them to check against their records; any errors in census materials or housing counts indicated by this check were to be reviewed and the appropriate corrections made. On June 11, 1976, the Bureau wrote to the mayor of Camden, explaining this program in detail so that available local information for checking against the counts could be collected in advance. On July 19, the preenumeration address list count of housing units for

each block of the city was transmitted to the city officials. During August, Camden provided the results of its field canvass of housing units in about 20 percent of the city blocks. The Census Bureau undertook an on-the-ground check in response to this information, but it shortly became clear that these data were faulty and, thus, the city withdrew them. The Bureau next received from Camden on October 26, 1976, the results of a more precise canvass of the city blocks. The Bureau checked these data against census records and a field reconciliation of significant differences was performed. As a result of this field check, 7 occupied housing units with 16 persons were added to the census count.

In the second phase of the local review program, city officials were provided, on January 17, 1977, with preliminary counts of housing and population for each city block in Camden. At this stage the population stood at 87,305, but after all field work was completed, the population was 90,292, still significantly below the 1970 population of 102,551. The city was asked to complete its review and inform the Census Bureau of any errors in the counts within 10 working days, but at the request of the city, the review was extended an additional 5 days.

In response to the preliminary counts from this pretest and to the subsequent announcement, also in January 1977, that the Census Bureau's 1975 population estimate for the city was 89,214, Camden claimed that the counts and the estimate were in error. The Camden pretest was the subject of hearings held in May 1977 before the Subcommittee on Census and Population of the House Committee on Post Office and Civil Service. In an effort to enjoin the use of the pretest figures or the 1975 estimate in determining the city's participation in Federal and State grant and assistance programs, Camden filed suit in the U.S. District Court for New Jersey on September 2, 1977. Since it had fallen below the 100,000 population mark, the city feared that it would lose its status as a prime sponsor in the Comprehensive Employment and Training Act (CETA) program. The Census Bureau eventually submitted the 1975 estimate to the Office of Revenue Sharing for use in the General Revenue Sharing Program.

On March 28, 1980, the Camden suit was dismissed by mutual agreement, with the city stipulating that it had sustained neither loss nor injury as a result of the 1976 pretest. The Comprehensive Employment and Training Act had been amended to provide that a jurisdiction would not necessarily lose its status just because it dropped below 100,000 persons. The city could continue as a prime sponsor as long as it could demonstrate its effectiveness in carrying out programs under CETA. Camden also was informed that per capita income was a greater consideration than population in the revenue-sharing formula.

Navajo Reservation Pilot Study

In September and October 1976, the Bureau conducted a test of coverage-improvement procedures in three chapters of the Navajo Indian Reservation.¹⁹ The focus of the test was on ways to improve coverage and the accuracy of data on American Indians. Federal agencies and members of the American Indian community, in the regional meetings mentioned, had strongly

¹⁹The reservation at the time of the study had 102 political units, or chapters. The three chapters involved in the test, which were located in the northeastern Arizona and northwestern New Mexico sections of the reservation, contained about 7,900 people. The reservation also extends into southeastern Utah.

emphasized the need for more accurate data on that population. The study explored the possibility of using special sources such as population registers to improve the count and examined other tools and procedures designed to enhance coverage, e.g., improved geographic aids and methods of recruiting indigenous enumerators.

The test involved three phases: (1) a complete enumeration of the three chapters, (2) matching the results from the enumeration to the Navajo population register maintained by the Bureau of Indian Affairs (BIA), and (3) the reconciliation of a sample of nonmatched cases through office and/or field followup, that is, checking to see if persons on the register but not enumerated, or persons enumerated but not on the register, for the three chapters should have been counted.

As a result of this test, it was decided not to use the Navajo population register as a coverage improvement device in 1980. While its use resulted in some improvement in the count, it was also time-consuming, very costly, and included a substantial number of persons who should not have been on the register due to death or because they had moved off the reservation.

The study involved the use of low-altitude (large-scale) aerial photographs and improved road maps provided by the Bureau of Indian Affairs (instead of the small-scale county highway maps used to conduct past censuses of that reservation). High-quality maps are essential to the conduct of an accurate census; they aid enumerators in completing their two most important functions—finding and counting all persons and housing units and allocating them to the correct geographic area.

The results of the test indicated that low-altitude aerial photography could help improve census coverage, particularly in areas for which road maps were inadequate, which were sparsely populated, and/or which had rough terrain. The photographs were especially useful for identifying the location of isolated housing units and for showing small roads and trails that did not appear even on the improved road maps.

The study also resulted in recommendations on enumerator recruitment and training and enumeration procedures and materials, some of which were subsequently included in the 1980 census. In particular, the study provided valuable experience in seeking assistance from and working cooperatively with the tribal government to improve the count.

Rural Relist Test

The Rural Relist Test was conducted in the late winter and spring of 1977 in the same Southern counties in which the Rural Listing Test was conducted. The purpose of the test was to see which listing or "prelisting" method would aid in preparing the more complete address mailing list for 1980 census areas where a commercial list was not available. Under the proposed "early" prelist, listing for the 1980 census would have been conducted in the spring of 1979, with an advance post office check in the summer of 1979 and another post office check in March 1980. Under the proposed "late" prelist, listing would have been conducted in January 1980, followed by the March 1980 post office check.

The evaluation of the "early" and "late" listings led to much the same results as in the Travis County test: a late listing would provide better coverage, but the difference could be offset by

conducting an advance post office check in concert with an early listing. The former was the approach chosen for 1980.²⁰

In addition to the major study resulting from the test, management (motion and time) studies provided data for the possible establishment of a piece-rate payment and time values (per listed unit) for use in developing budget estimates and staffing requirements for the 1979 prelist operation.

Oakland, CA, Pretest

Oakland, CA, was chosen as the site for the third major test census. It had a suitable population size (333,000 at the time) and there were substantial Black, Spanish-origin, and Asian and Pacific American populations. The area had a number of hard-to-enumerate areas in 1970. Finally, a commercial mailing list was available, as were the means to assign geographic codes to the addresses for the entire city by computer.

The major purpose of the test, as in Travis County and Camden, was to study field-collection methodologies and organization, including certain coverage-improvement techniques. In addition, several new questionnaire content items were tested, among them alternative versions of the Spanish-origin and "race" questions. Census Day was April 26, 1977; the district office opened in early February and closed the end of October, approximately 2 months behind schedule.

Three questionnaires were used in the Oakland test: two short-form versions that were each mailed to about 40 percent of the households and a long form that was mailed to about 20 percent of the households. One of the short forms contained "race" and Spanish-origin questions that were similar to those used in Travis County and in Camden, but the other included a new version of the race item and a new general ethnicity query that combined elements of the short-form Spanish-origin question and the long-form ethnicity item. The Oakland long form contained these two new questions.

<p>4. Race</p> <p>Fill one circle.</p> <p>If "Asian or Pacific Islander," specify, for example, Chinese, Filipino, Hawaiian, Indian (Asian), Japanese, Samoan, etc.</p>	<p><input type="radio"/> White</p> <p><input type="radio"/> Black or Negro</p> <p><input type="radio"/> Indian (Amer.)</p> <p>Print tribe _____</p> <p><input type="radio"/> Asian or Pacific Islander } Print specific race: _____</p> <p><input type="radio"/> Other _____</p>
<p>7. Is this person's origin or descent —</p> <p>If "Spanish/Hispanic," specify, for example — Chicano, Cuban, Mexican, Mexican-American, Mexicano, Nicaraguan, Puerto Rican, Spaniard, Venezuelan, etc.</p> <p>If "European, except Spaniard," specify, for example — English, German, Hungarian, Irish, Italian, Lithuanian, Polish, Swedish, Ukrainian, etc.</p> <p>If "Other," specify, for example — Brazilian, Chinese, Jamaican, Korean, Lebanese, Nigerian, Vietnamese, etc.</p>	<p><input type="radio"/> Afro-American <input checked="" type="checkbox"/></p> <p><input type="radio"/> Spanish/Hispanic _____</p> <p><input type="radio"/> European, except Spaniard _____</p> <p><input type="radio"/> Other _____</p> <p>Print specific origin: _____</p>

There were a few other major differences in wording and format from the Travis and Camden questionnaires and two other significant modifications: The "head of household" concept in the relationship question was replaced by a reference person (the person in column 1) and three new questions on housing quality (cracks or holes, peeling paint, and broken plaster) were added.

²⁰The planned advance post office check of prelist addresses was cancelled, however, when the listing operation fell behind schedule in 1979 (see Ch. 3, "Geography, Addresses, and Questionnaire Printing and Labeling"). To compensate for this, some prelist areas were recanvassed in 1980, some time after Census Day (see Ch. 5, "Field Enumeration").

H28a. Does this house (apartment) have open cracks or holes in the interior walls or ceiling?
(Do not include hairline cracks)

☐ Yes

☐ No

b. Does this house (apartment) have holes in the floors?

☐ Yes

☐ No

H29. Is there any area of broken plaster on the ceiling or inside walls which is larger than the size of this page?

☐ Yes

☒

☐ No

H30. Is there any area of peeling paint on the ceiling or inside walls which is larger than the size of this page?

☐ Yes

☐ No

The Bureau tested the new “race” and ethnicity questions in Oakland to determine if they could be used in the 1980 census. A number of factors had led the Bureau to reevaluate its use of the three items on race, Spanish origin, and ethnicity that had been used in earlier pretests and to test the two new ones: (1) the need to utilize questionnaire space effectively, (2) the requirement that the Bureau and all other Federal agencies provide data for four race categories (i.e., White, Black, American Indian and Alaska Native, and Asian and Pacific Islander) and for the Spanish-origin population according to an OMB directive providing guidelines on ethnic and racial statistical reporting, (3) the problems with the three questions that were encountered in the Travis County, Camden, and National Content tests. Among these problems were the misunderstanding of the questions and the resultant high nonresponse rates, and the double coverage of Spanish-origin people in both the Spanish-origin and ethnicity items, (4) the recommendations and concerns expressed by several of the Bureau’s advisory committees, and (5) the numerous requests from ethnic groups and local governments for 1980 census data on a large number of ethnic groups.

The old version of the race item listed eight specific categories—White, Black, American Indian, and five Asian or Pacific Islander groups. The item also included an “Other” category for which people were asked to write in their specific race; respondents who marked “American Indian” were asked to give their specific tribe. The new version of the race item replaced the five specific Asian categories with one category, “Asian or Pacific Islander,” and space for a written entry of a specific group. The Committee on the Asian and Pacific Americans Population expressed concern about this new approach, since it would have provided only sample, and not 100-percent, counts for the individual Asian and Pacific Islander groups. Questions were also raised about the public’s understanding of the term “Asian and Pacific Islander.”

In the new ethnicity question, respondents were asked to mark one of four broad categories—“Afro-American,” “Spanish/Hispanic,” “European, except Spaniard,” and “Other.” If the respondents marked one of the latter three categories, they were to print their specific origin. The new question was designed

to replace the short-form Spanish-origin question, which allowed those who were Hispanic to mark a specific Hispanic subgroup (Mexican-American, Puerto Rican, or Cuban) or to fill the circle for “Other Spanish,” and the long-form ethnicity question which provided 21 ethnic categories, including “Other.” The Census Bureau’s Spanish-origin advisory committee registered criticism of the new approach because (1) while it would have provided 100-percent counts of the general category “Spanish/Hispanic,” it would have only allowed sample counts for the Spanish-origin subgroups; such information would have been available only at the tract level and above, not for blocks; and (2) they believed that some Hispanics would not identify themselves in the Spanish/Hispanic category.

Although, after editing and followup, the old and new versions of the race item yielded about the same proportion of Asian and Pacific Islanders, a considerable proportion of the Asian and Pacific Islander responses in the new version were incomplete or inconsistent. With regard to answers to the ethnicity item, the new version resulted in substantial inconsistency or incomplete reporting of Spanish-origin persons. However, the Spanish-origin item (old version) had a high nonresponse rate and “suspected” misreporting in the “Central and South American” category. The Bureau concluded, however, that these difficulties with the Spanish-origin item could be overcome with modifications to the item. After evaluating the results of the new race and ethnic items in Oakland, the Bureau decided not to use the new versions but to resume the three-question approach that had been used in previous pretests. However, the final versions of these three questions in the 1980 questionnaire were different from those used in Travis County and Camden.

The mailout/mailback census method was employed in Oakland, CA, as in Travis County and Camden, but the mail-return rate of 56.8 percent was lower than expected. To test their effectiveness in increasing mail response, reminder cards were mailed only to housing units in even-numbered enumeration districts so that they would arrive 2 days after Census Day. The test led to a conservative estimate that mail response could be improved by as much as 5 percent by using reminder cards, but it was not believed that the mailing cost would be offset by savings in reduced followup. A further study concluded that selective mailing to certain types of structures (single- or multiunit) or to households that received a certain type of form (short or long) would not be useful. Reminder cards were not used in 1980.

Spanish-language questionnaires were made available under the same arrangements that were used in Travis County and Camden, and the number of requests for these forms—only 94—was low, consistent with the earlier tests.

Telephone and walk-in assistance centers were again used to help respondents fill out their questionnaires; mobile vans, which had been tried in Travis County and, to a limited degree, in Camden, were not utilized because of the difficulty in publicizing their locations. About 86 percent of all contacts were through the telephone center and the remainder were divided among the 11 walk-in centers, which were in various locations throughout the Oakland area, including minority community centers and organizational offices. Over 62 percent of all public contacts were made on or before Census Day. (Households received their questionnaires 4 days before Census Day.)

Enumerators in the first phase of followup (of nonrespondents) were paid on a piece-rate basis. In Travis County and Camden

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they were paid hourly, but time studies were conducted in those two tests and the Oakland piece rates were based upon these. Piece rates had been used in 1970, with pay by the hour as an alternative where needed.

A complete-count committee was set up in Oakland and, drawing upon the Camden experience, formal guidelines for the conduct of the committee were implemented. The guidelines explained the roles of the committee members, the chairperson, the mayor, and the Bureau's district office and headquarters personnel. Monthly meetings beginning 4 months before Census Day and running for 2 months afterward were called for, but because of the late formation of the Oakland committee, the first meeting was not held until shortly before Census Day.

As in the Travis County and Camden pretests, there was a study of the effect on coverage of conducting a recheck of units classified vacant or nonexistent during the first phase of followup. Results of the Travis and Camden pretests showed the effectiveness of an extensive followup of units initially classified as vacant or nonexistent by the first followup enumerator. As part of each of these pretests, a post office match procedure was simulated as a means of limiting the followup workload. The match involved a comparison of the occupancy status as reported by the nonresponse enumerator and the post office; cases which indicated a possible enumerator error were then designated for reinterview. Results from the Travis County and Camden tests indicated that the post office match procedure would correct some of the misclassification errors while providing a reduction in followup workload. Therefore, it was decided to implement the post office match in Oakland as part of the census process and measure the methodological and procedural results. The match was conducted by comparing vacant and nonexistent classifications made by enumerators in the first followup with questionnaires returned as vacant or nonexistent during the postal casing check. Those cases that did not match were reinterviewed during the second followup.

The results of the study showed that an estimated 1.2 percent of all occupied housing units were incorrectly classified as vacant or nonexistent by enumerators in the first followup. Of those units classified as vacant by the enumerator, an estimated 12.7 percent were actually occupied housing units, while an estimated 7.0 percent of the deleted units were actually occupied. Had there been no followup of vacant and deleted units, the classification errors would have caused an estimated 0.81-percent undercount of the population. As a result of the study, a 100-percent followup of vacant and deleted units was deemed preferable to a followup preceded by a match between enumerator and post office classifications (this matching was designed to limit the followup workload). The post office matching did not reduce the followup workload sufficiently to offset the cost of the matching. Furthermore, the post office match eliminated too many units needing followup.

An innovation was introduced into the content edit scheme for Oakland (and eventually implemented in 1980): short- and long-form questionnaires were edited separately by different clerks to improve production and quality of work. In 1970 and in the previous pretests, the same clerks edited both short and long forms.

The mailing list for the Oakland pretest was created much as in Travis County and Camden by the purchase of a commercial mailing list, which underwent three postal checks and a precan-

vass by census enumerators. It was not necessary to conduct a prelist operation, since the entire test area was covered by a commercial mailing list.

As in Camden, an effort was made to evaluate the potential for improving coverage when the purchased mailing list for 1980 was merged with the final 1970 address register for Oakland. The results of the study (which did not involve an actual merging of the lists) showed that the count of occupied housing units would have been improved by about 0.7 percent by such a merge.

A number of management studies undertaken during the Oakland pretest evaluated operating procedures and established standard times to be used in determining budget estimates and staffing requirements. Operations studied (and for which standard times were issued) included the manual geocoding of addresses in the district office, the check-in of questionnaires and the edit of the item on the number of units at an address, the content edit of mail-returned questionnaires, the preparation of ED maps, telephone followup operations, the check of nonhousehold source (driver's license) lists, and preliminary population and housing-unit counts. Management studies of field operations provided data for the calculation of piece-rate payments. Standard times were issued for prec canvass, the first and second followups, and the special place enumeration.

A trial version of a test to aid in the selection of nonsupervisory field personnel was first used in the Oakland pretest. The Census Bureau's desire to develop valid selection procedures stemmed in part from the goal of reducing the census undercount. It was felt that improving the quality of the census workforce would aid in improving the quality of the census. The Census Bureau began work on field employee selection procedures in December of 1975 when written descriptions of all census jobs were reviewed. Then, job incumbents and their supervisors were interviewed during the Travis County, Data Collection Unit, Camden, and Oakland pretests (and subsequently in the Richmond dress rehearsal). Through these interviews, detailed information on the specific tasks performed by census workers in each job was collected, and the knowledge, skills, abilities, and personal characteristics required to perform census work were identified.

When all of the information collected had been analyzed, the next step was the construction of a multiple-choice Field Employee Selection Aid Test—General (FESAT-G), an experimental test consisting of 7 subtests and containing 154 items. The experimental FESAT-G was administered to over 4,000 job applicants during the Oakland pretest. Performance data were collected and evaluated for enumerators in the first followup and for edit clerks to see how performance on the test was related to performance on the job.

Enough information was obtained to shorten the FESAT-G to 6 subtests and 65 items. This refined and modified version of the FESAT-G was used in the Richmond and lower Manhattan dress rehearsals.

Dress Rehearsal Program

The purpose of the dress rehearsal program was to test all the various operations planned as part of the 1980 census to ensure that they would actually work as part of a full-scale enumeration. After the dress rehearsal, only materials and procedures that did not appear satisfactory for 1980 would be revised.

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A number of criteria were considered in planning the dress rehearsal program. It was believed that:

1. Every type of district office which was planned for the 1980 census—conventional, decentralized, and centralized—should be included in the dress rehearsal. One reason for doing this was the need to start preparing procedural manuals and training guides for each type of office. (Conventional offices were in areas of the country where the door-to-door method of enumeration would be used; decentralized offices were chiefly in rural and suburban areas where the mail-census method was employed, and centralized offices were in large cities in mail-census areas.)
2. Every operation planned for the 1980 census should be conducted in the field during the dress rehearsal.
3. The centralized and decentralized offices should be contiguous so that there would be an opportunity to learn something about the problems encountered when two offices operate adjacent to each other—i.e., problems in recruiting, publicity, post office operations, etc.
4. The district offices should operate with full management staffs.
5. The district offices should operate under regional office control without direct intervention from headquarters.
6. A “pyramidal” training program similar to the one planned for 1980 should be carried out. The headquarters staff should train regional coordinators, who would in turn train district office management personnel; the latter would train first-line supervisors, who would train production employees.

With these objectives in mind, the Census Bureau selected three areas in which to conduct dress rehearsal activities and officially announced their locations in late July 1977: the Richmond, VA, area, encompassing the city of Richmond together with Chesterfield and Henrico Counties; La Plata and Montezuma Counties, CO; and that part of New York’s Manhattan Borough south of Houston Street (lower Manhattan).

A number of working groups were established within the Bureau in May 1977 to discuss issues regarding procedures to be followed in the dress rehearsal program. These groups covered such topics as office and field operations in the district offices, coverage-improvement techniques, the post-enumeration survey, prelist activities, special places, geography, personnel matters and public relations, processing activities, clerical processing, data products, and the enumeration of American Indians. These working groups made formal written recommendations on subjects which required decisions by the Dress Rehearsal Planning Committee (an interdivisional group comprised of senior staff members of each participating census division; a similar group operated during the pretests) or by higher levels at the Bureau. The planning committee met weekly from April 1977 to November 1978, and normally discussed a half dozen or so operational subjects at its meetings.

Richmond, VA, Area

The Richmond area was selected as the principal site to test-run mail-census procedures; it was chosen because it contained

a substantial minority population (primarily Black), the population size (about 519,000) was deemed adequate for dress rehearsal purposes and was within the budgetary constraints, and certain geographic aids (GBF/DIME files) were available. Another advantage of Richmond was that, for media purposes, it was “freestanding”—it did not rely on the media of a larger city nearby. This ensured that the level of publicity would approach that which would be realized in 1980. Census Day was April 4, 1978. A centralized district office covering a portion of the city of Richmond opened on January 3; the district office manager was selected from among Bureau headquarters staff. A decentralized office covering the balance of the area also opened on January 3; as would be typical for decentralized offices in the census, a non-Bureau employee was selected as district office manager. The centralized office closed in mid-September and the decentralized office later that month, about 5 and 8 weeks behind schedule, respectively. This was the only test of decentralized procedures prior to the 1980 census.

The district office temporary staff of supervisors, crew leaders, enumerators, and office clerks was recruited through paid publicity rather than a referral system. All workers were paid hourly, except for first- and second-phase followup enumerators in the centralized office and first-phase followup enumerators in the decentralized office, who were paid on a piece-rate basis. As an experiment, a bonus payment system was used for enumerators in the first phase of followup in the centralized office. Enumerators who produced 75 or more acceptable cases a week (of which at least 11 had to be long forms) without working overtime were paid \$25 over and above their piece rate. The bonus system was instituted because enumerators’ production in the pretests had been lower than expected; the first phase of followup was not completed on schedule in any test. However, the bonus payment system did not work sufficiently well to warrant its use in 1980. Under the Fair Labor Standards Act (FLSA), piece-rate enumerators were paid at least minimum wage for the dress rehearsal; for the 1980 census, the Bureau was exempted from FLSA provisions. Pay rates in the centralized office were slightly higher than in the decentralized office, a situation that resulted in some adverse publicity during the conduct of the Richmond dress rehearsal. Because of the low unemployment rates in the suburban counties, there was some difficulty in filling the followup enumerator assignments in the decentralized office.

A new “systems” approach to training in the dress rehearsal differed from the traditional verbatim training, used since the 1950’s, in that it was performance- and learner-oriented, whereas the traditional method emphasized the learning of specific information imparted by a trainer. The systems approach was suggested by the Civil Service Commission,²¹ which the Bureau had asked to review its training program and which issued a preliminary report in March 1977. The systems approach made greater use of visual aids and workbooks, and emphasized individual instruction to meet the goal of uniformity of performance. The trainees learned principally by doing, though there was still a need for lectures and for formal classroom training.

As mentioned above, the mailout/mailback census method was used in the Richmond area. Address mailing lists were created

²¹Later renamed the Office of Personnel Management.

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in two ways. For the city of Richmond, address lists were purchased from commercial vendors. These addresses were checked first in the advance post office check on November 9, 1977, when postal workers added, deleted, and corrected listings. Then census enumerators checked the list once more in February 1978 in the "precanvass" operation, and postal workers again updated addresses on March 14 and at the time of delivery of the questionnaires on March 31. In Henrico and Chesterfield Counties, the address lists were created by census enumerators in a "prelist" operation. The prelist office (which later became the decentralized district office) opened in August 1977 and the listing occurred from September 15 to October 7. Prelist addresses were keyed into the computer so that preprinted address registers could be generated (in 1970, the address books for prelist areas were handwritten). Prelist addresses also underwent the advance post office check and two March updates by the Postal Service. The prelist went smoothly, production was high, and there were no major problems. However, the area prelisted was not really typical of most of the more rural areas where listing would occur for the 1980 census, in that about 80 percent of the addresses in the suburban counties had house numbers and street-name addresses, rather than rural route designations.

Most of the coverage-improvement devices used in the earlier tests were employed again in the dress rehearsal. These included prec canvass, the vacancy/delete check, the nonhousehold sources check, Spanish-language questionnaires, telephone and walk-in assistance centers, local review, the option of having team enumeration for selected areas, and "casual count," which was directed at counting persons with no fixed residence. A new procedure used for the first time in the dress rehearsal was the "dependent household roster check." When households returned incomplete questionnaires, they were recontacted by telephone or personal visit, and read the roster of individuals given for the household at the time of enumeration to determine whether it was complete and accurate. This procedure was used in the 1980 census.

The mail-return rate for the dress rehearsal was 78.9 percent—74.1 percent for the centralized and 80.9 percent for the decentralized area; this response was significantly higher than the mail-return rates in the Camden and Oakland tests. The improved mail response can be attributed to a number of steps instituted by the Bureau, e.g., the involvement of a volunteer advertising agency, an effective complete-count committee for Richmond city, and an aggressive Community Services Program. The advertising agency, whose services were obtained through the Advertising Council, ran a test campaign designed to determine the effectiveness of free public-service advertising (which was proposed for 1980) in motivating the public's response; this technique was then adopted for 1980. The multimedia effort was more extensive than the promotional campaigns for the pretests and appeared to contribute to the excellent mail-return rate. The establishment by the mayor of Richmond of a complete-count committee representing all segments of the city proved to be an effective public-relations tool in reaching the minority community in particular. The Bureau's Community Services Program, represented by two community services specialists, focused on projects that could be implemented by community organizations in the census area and on reaching persons at the grassroots level in order to (1) establish census credibility, (2) reduce hostility and apathy toward the census, (3) convince people to complete

and return their census forms, (4) publicize the census, (5) assist in recruiting of minority staff, and (6) determine the best locations for recruiting centers, questionnaire assistance centers, and "casual count" interview stations.

The questionnaires used in Richmond were not significantly different from those used in the pretests, but changes were incorporated reflecting what was learned in the earlier tests. The resultant product closely resembled the final 1980 census forms. Color was used on a census questionnaire for the first time as a device to improve the readability of the forms. Blue print was used on the cover, page 1 (instructions), and the back page; blue background fields were used to highlight the questions and person-column headings inside the questionnaire, where black print was used.

There were no tests of alternative question wording, and only one short form and one long form were used. A new sampling pattern, reflecting decisions made after the Oakland test, was introduced into the dress rehearsal. The 100-percent income question had been dropped and only the long form contained an income item. In order to collect better income (and other sample) data for small areas, it was decided that one-half the households in functioning governmental units with under 5,000 persons (based on the latest available Bureau estimates) would receive the long-form questionnaire, and one-sixth of the households in functioning governmental entities with 5,000 or more persons would receive the long form.²² In Travis County, Camden, and Oakland, the long form had been mailed to 20 percent of the households. (The small-area cutoff was lowered to 2,500 persons for the 1980 census.)

Changes were made to the "race," Spanish-origin, and disability questions, among others. The "race" item was expanded from the 9 categories used on one version in the Oakland test to 15, incorporating several specific groups for the first time—Vietnamese, Asian Indian, Guamanian, Samoan, Eskimo, and Aleut.²³

The Spanish-origin item was designed to highlight the response "Not Spanish," to reduce the nonresponse rate; the term "Central or South American" was deleted to eliminate misreporting in that category. (In the 1970 census and in pretests for the 1980 census, some respondents misinterpreted the "Central or South American" category to mean the central or southern parts of the United States.) Despite the design change, there was a high rate of nonresponse to this item in Richmond, and it was believed that the failure to answer was due primarily to the fact that non-Spanish persons had to read through a series of Spanish categories before responding to the "Not Spanish" category. Thus, some persons not of Spanish origin may not have realized that they, too, were supposed to answer the question. In addition to the high nonresponse rate, there was misreporting in the "Mexican-American" category in Richmond; some persons, who had marked a Spanish-origin category on the questionnaire, indicated in reinterview that they were not of Spanish origin. Many of these persons had scratched out "Mex." on the "Mex.-American" category to indicate their origin as American.

²²In the Richmond area, there were no functioning governmental units, so two small unincorporated communities were designated for the 1-in-2 sample.

²³The last two categories were on a special questionnaire used only in Alaska in 1970, but were not included on the main questionnaire.

The disability question was simplified to ask only about limitations in two areas—work and use of public transportation—whereas the Oakland test asked about limitations or prevention from engaging in six different activities.

For the dress rehearsal, another innovation was introduced into the scheme for editing the questionnaires—templates with instructions printed on them. When an edit clerk placed a template over the questionnaire, the respondent's answers showed through. Four templates were involved in editing the long form, and two for the short form. Having edit instructions imprinted on the template obviated having to use an instruction booklet, as in the pretests. This device proved workable and was improved for use in the 1980 census.

The dress rehearsal provided the first look at decentralized procedures during planning for the 1980 census, and significant changes in these were made as a result of the experience. In the edit area, procedures were redesigned to be somewhat more centralized. Whereas in the dress rehearsal, mail-return questionnaires were distributed to enumerators for editing in their homes (which caused control and logistical problems) as they had been in the 1970 census, for 1980 the edit of mail returns was done in the district offices. Another change for 1980 was the creation of the job of quality-control enumerator to check the followup enumerators' work; in the dress rehearsal, this task was assigned to crew leaders, but was not handled very successfully since they had so many other duties to perform. Also, as a result of the dress rehearsal experience, the two phases of followup assignment control—checking the quality of work by the enumerators and checking the returned questionnaires against the master address registers—were split for the census and handled by separate units.

Alternative procedures for conducting the post-enumeration survey (PES), which was planned as a major element of the coverage evaluation program for the 1980 census, were also tested in both the Richmond- and Colorado-area dress rehearsals. Post-enumeration surveys had been conducted as part of the coverage evaluation programs for the 1950 and 1960 censuses and involved interviewing a sample of households after the census and checking the list of names and addresses collected against census records to ascertain whether the individuals and housing units had been counted. Other coverage evaluation techniques (such as demographic analysis) can produce estimates of coverage for the national level and for certain characteristics (age, sex, race), but a relatively large-scale sample such as the PES is needed to produce coverage estimates for subnational areas and for socioeconomic characteristics. (For a detailed discussion of the 1980 census coverage evaluation program, see ch. 9.)

PES techniques had been tested in conjunction with the Oakland pretest. In both Oakland and in the dress rehearsals, alternatives for type of interview, sample design, sample size, questionnaire content, and techniques for estimating and reducing statistical bias were considered.

In Richmond and Colorado, a sample of blocks was selected and interviewers visited these blocks after the census offices had closed, listing all structures large enough to contain housing units. Interviews were conducted at all single-unit structures, at all units in small (10 or fewer units) multiunit structures, and at a sample of units in large multiunit structures in September and October 1978.

Two types of interviews were used. The first involved a "multiplicity" procedure wherein interviewers obtained a current household roster and the addresses of the household members on Census Day. Then names of specified relatives (such as children over 18 years old) and where they lived on Census Day were collected.

A second type of interview was employed at an independent sample of addresses. For each household, interviewers obtained a list of current residents and their Census Day addresses, and (using current occupants or neighbors) a list of Census Day residents of the sample address. Either list could be used in measuring coverage.

After the field work was completed, persons listed on the interview questionnaires were matched to census forms to determine if they had been enumerated in the census. Also, housing units were matched to listings in the address registers to determine if the housing units had been missed in the census.

Based in part on the dress rehearsal experiences, it was decided not to use the "multiplicity" type of interview in 1980. The approach finally used involved asking members of a household in the PES sample where they lived on Census Day. In cases where the PES-sample housing unit was vacant, or occupied by a different household on April 1, no attempt was made to reconstruct the household roster as of that date.

During the Richmond dress rehearsal, management studies were conducted in both centralized and decentralized offices to provide data for budget and staffing estimates for the check-in of questionnaires and the edit of the questionnaire item for the number of units at an address, for edit of the content of mail-return questionnaires, preliminary population counts, quality control of enumerator questionnaires, merge of followup and mail-return questionnaires, and address range checks. Studies of field operations (prelist and followup) provided information for budget and staffing estimates and data for establishment of piece-rate payments.

La Plata and Montezuma Counties, CO

Conventional enumeration procedures were examined for the first time since the 1970 census in a dress rehearsal census conducted in La Plata and Montezuma Counties, CO. Census Day was April 4, 1978, the same as for the Richmond, VA, area dress rehearsal. In the conventional method, postal carriers leave unaddressed Advance Census Reports (ACR's) at households prior to Census Day. The ACR is a combination cover letter, instruction sheet, and detachable short-form questionnaire that the householder is asked to complete and hold. Enumerators then go door-to-door, collecting the filled questionnaires and helping respondents complete them. In addition, the enumerators administer long-form questionnaires to a sample of households and transcribe the short-form information for these onto their long forms.

La Plata and Montezuma Counties (which had a total of about 40,000 people) were selected to test conventional, door-to-door enumeration procedures because these areas were typical of the kinds that would be enumerated in that manner in 1980—sparsely populated and large geographically, they contained American Indian reservations, national parks and forests, and resort areas. In addition, these counties had significant Spanish-origin populations. To perform a complete enumeration

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of the Ute Mountain and Southern Ute Indian reservations, small parts of Archuleta County, CO, and San Juan County, NM, were included.

A district office was established in the town of Durango and a local resident was hired as district office manager. The office opened in mid-February (a few days late due to the delayed arrival of furniture, materials, and supplies) and closed in early August, about 3 weeks behind schedule. Although some problems did arise, the enumeration went well overall and the conventional procedures planned for the 1980 census proved feasible.

A major problem area was that of recruiting and staffing. Recruitment got off to a slow start because much of the publicity material had to be written in the district office after it opened. There were high turnover rates for enumerators, especially during the regular enumeration phase, when the rate was over 70 percent. This was attributable in part to the lure of more lucrative jobs in resort areas.

The content of the regular questionnaires used in the Colorado-area dress rehearsal was the same as that in Richmond. As mentioned above, a decision was made prior to the dress rehearsals not to ask income on a 100-percent basis in 1980, so the income question tested in the pretest censuses was deleted from the dress-rehearsal short forms. In four towns in the Colorado test area with under 5,000 people, the long-form questionnaire (with the income questions) was used at 50 percent of the households.

An important component of this dress rehearsal was the use of a supplementary questionnaire for Indian-reservation households that contained at least one American Indian. Requests by Federal, State, and tribal officials for additional information on the unique living conditions on reservations prompted the Bureau to develop a special supplementary questionnaire for use in 1980. The Colorado-area dress rehearsal marked the first, and only, use of this supplementary questionnaire prior to the 1980 census.

The supplementary questionnaires, which contained 33 numbered items, were administered in addition to the short- or long-form regular questionnaires in households with at least one American Indian member. The first 10 items related to housing. The remaining 23 questions were to be asked of each individual in the household (whether that person was an Indian or not); the questions were on tribal affiliation, education, migration, health, employment, utilization of government programs, and income.

A good deal of knowledge was gained from the experience of enumerating Indian households in Colorado. It became evident that the administration of the supplementary questionnaire was time-consuming for the enumerator and burdensome for respondents, especially when the supplementary questionnaire was used at households that also received a long-form questionnaire. As a result of the Colorado experience, it was decided for 1980 to ask the supplementary questions only at reservation households that contained at least one American Indian, Eskimo, or Aleut, and which received a short-form questionnaire. Long-form (sample) households would not be given a supplementary questionnaire. Furthermore, based on results of the Colorado test and written comments from tribal governments, it was decided to reduce the number of items on this questionnaire.

Bureau planners also gained additional valuable experience about enumerating on reservations. Procedures to improve the enumeration, such as aerial photography, use of indigenous enumerators, and efforts to obtain the assistance of the tribal

governments were used. The enumeration of one reservation went rather well, while that of the other encountered some difficulties. The enumerator turnover rate was lower and the field work was completed earlier on the reservation where the Census Bureau was able to obtain the assistance of the tribal government in publicizing the recruitment effort.

Several of the coverage-improvement devices employed in mail census areas were also used in the conventional test area: Spanish-language questionnaires, coverage items on the questionnaire, the vacancy/delete check, and local review. Additionally, there were two major coverage-improvement checks that were not used in mail census areas. The first was a control on the quality of enumerators' coverage of housing units that consisted of an advance listing of a sample of 24 addresses in each ED by the crew leaders; these addresses were checked against the enumerators' listings, and if 2 or more addresses were missed, the work was deemed unacceptable and was sent for recanvassing. This procedure was employed in the dress rehearsal and in the 1980 census.

The second check was called the post-enumeration post office check (PEPOC). After Census Day, enumerators filled a "white card" for each listing they had entered in the address registers. This card was given to the appropriate post office to be matched against carriers' delivery routes. A "Post Office Report of Missing Address," or "blue card," was filled by the postal workers for each residence that appeared to have been missed by the census. In the district office, addresses on the "blue cards" were matched against the address registers to determine if the housing units were already enumerated. If any address could not be located in the registers, an enumerator was sent to the unit to fill a census questionnaire. For the dress rehearsal, the PEPOC was evaluated to measure the actual and potential yield of the program and to identify areas where procedural improvements could be introduced. The number of housing units added to the census as a result of the PEPOC in the dress rehearsal was 0.9 percent; however, during the PEPOC evaluation, it was found that other units could have been added had the procedures been followed correctly and had address searches for blue cards with insufficient address information been carried out. Thus, the potential add rate from the PEPOC was 1.4 percent, the same as the add rate for PEPOC in the 1970 census.

During the Colorado dress rehearsal, as in Richmond, management studies of field operations were conducted to provide information for budgeting and staffing estimates and for establishment of piece-rate payments. The operations observed were the advance listing of addresses, regular enumeration, and followup enumeration.

Lower Manhattan and the National Test of Spanish Origin

The Bureau originally intended to conduct its dress rehearsal program only in the Richmond, VA, area and in the two rural counties in Colorado. Members of the Bureau's minority advisory committees, however, noted that these areas did not contain significantly large Hispanic or Asian American populations and suggested that the Bureau test its procedures in an area with a diversity of minority persons. In response to that suggestion, the Bureau decided to conduct a further test in that part of New York city's Manhattan Borough south of Houston Street. Lower

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Manhattan was selected because it contained a variety of racial and ethnic groups—there were large Spanish-origin, Chinese, Italian, and Black populations among its nearly 119,000 people. Houston Street, which runs from the Hudson River almost to the East River, served to delineate a section of the city that could be recognized easily—an important consideration for publicity purposes.

Census Day in lower Manhattan was originally scheduled for September 12, 1978, but since the State of New York was holding its primary elections on that day as well, the Bureau decided to postpone Census Day for 2 weeks, until September 26. The district office was slated to close in late January 1979, but due to difficulties in conducting the field work, did not do so until late May.

The mailout/mailback census method was employed in this dress rehearsal, as it had been in the Richmond area, and address lists were prepared accordingly; a commercial list was purchased and updated by the post office and by the Bureau in its "precanvass" operation. The address list supplied by the commercial vendor was less complete and accurate than anticipated. Deficiencies in the list created problems for the advance post office check; some mail carriers, for instance, demurred at having to fill out cards for all the units that were missing, especially when large multiunit buildings had been left off the commercial list entirely. This experience led the Bureau to take several steps to rectify the situation, including allowing one "add" card to be completed for all units at one address and simplifying the printed instructions to the carrier.

Only 42 percent of the occupied households mailed back their questionnaires, the lowest mail-return rate in any of the pretest or dress rehearsal censuses. There were several possible reasons for this; a major one was that when a census is conducted for only a small section of a large metropolitan area, it is difficult to achieve sufficient attention from large daily newspapers and local, mainstream electronic media. That was the case in lower Manhattan, and, in addition, the major New York newspapers were not in print for much of the enumeration period, due to a strike by pressworkers.

The followup workload was especially large in the lower Manhattan dress rehearsal because of the low mailback rate; this factor, as well as a dearth of workers, caused delays in the completion of the followup operation. Throughout most of the enumeration period, the district office had problems recruiting and retaining enumerators. It was the Bureau's goal to employ only those qualified persons who lived within the test area, i.e., in lower Manhattan. This goal was established to assure the hiring of a workforce familiar with the area they were enumerating and to see if the district office could satisfy its hiring needs from within its own boundaries, rather than from outside, which would be discouraged in 1980. Because of the high rate of attrition among enumerators, the district office had to begin hiring persons from outside the test area, first from other parts of Manhattan, then from the other boroughs of New York City.

The Bureau also aimed to hire a work force representative of the racial and ethnic balance of lower Manhattan, and it was successful in this regard, except for the hiring of Chinese Americans. Enumerators who could speak Chinese were especially needed to work in Chinatown (which was in the test area), but an insufficient number of citizens of Chinese ancestry applied for jobs; consequently, the requirement that census workers be U.S.

citizens was waived. This waiver remained in effect for the 1980 census.

The short- and long-form questionnaires used in lower Manhattan were essentially the same as those used in the Richmond area, except for changes in the race, Spanish-origin, and language questions. The Bureau had found that the use of the label "Race" for questionnaire item 4 might be confusing to some respondents since item 4 lists national-origin groups such as "Japanese," "Guamanian," and "Vietnamese." The Census Advisory Committee on Population Statistics had raised objections to the term. Therefore, for the lower Manhattan dress rehearsal census, the word "Race" was dropped and the heading for the question was changed to "Is this person—." This change was adopted for the 1980 census as well.

About the time the lower Manhattan office opened, the National Test of Spanish Origin (NTSO) was concluded. The NTSO was designed and conducted in response to reporting errors in the Spanish-origin question in Richmond and compared answers for two alternative versions of the Spanish-origin question. One of the questions was new, and the other closely resembled the Spanish question used in Richmond (see fig. C).

Figure C. National Test of Spanish Origin Question Variants

"Richmond" Version	
7. Is this person's origin or descent — <i>Fill one circle.</i>	<div><input type="radio"/> Mexican-Amer.</div> <div><input type="radio"/> Cuban</div> <div><input type="radio"/> Mexican or Chicano</div> <div><input type="radio"/> Other Spanish</div> <div><input type="radio"/> Puerto Rican</div> <div><input type="radio"/> Not Spanish</div>

"Lower Manhattan" Version	
7. Is this person of Spanish/Hispanic origin or descent? <i>Fill one circle.</i>	<div><input type="radio"/> No, not Spanish/Hispanic</div> <div><input type="radio"/> Yes, Mexican, Mexican-Amer., Chicano</div> <div><input type="radio"/> Yes, Cuban</div> <div><input type="radio"/> Yes, Puerto Rican</div> <div><input type="radio"/> Yes, other Spanish/Hispanic</div>

The new version of the Spanish-origin question was called the "lower Manhattan" version because it was also used in that dress rehearsal. The wording of this new question was especially chosen to emphasize the intent of the question. Also, the category "No, not Spanish/Hispanic" was positioned first in the question so that non-Spanish persons could readily respond without reading all the Spanish categories. The main purpose of this reformatting was to reduce the item nonresponse rate; it was expected that this change would also reduce the misreporting in the "Mexican-American" category.

In the NTSO, each variant questionnaire was sent to about 3,200 housing units in late July. The questionnaires were mailed out from and returned to the Bureau's Jeffersonville, IN, facility. There was no followup of nonresponding units.²⁴

²⁴ A mail-return rate of at least 50 percent was anticipated, based on the experience with the 1975 National Mail Income Pretest. If this return rate was achieved, the sample size would be sufficient to detect, with a 90-percent probability, a real difference of at least 5 percentage points in the proportion of nonresponses to the two Spanish-origin questions being examined. The actual mail-return rate was 50 percent.

Chapter 2. Planning the Census

The results of the NTSO and of the lower Manhattan census showed that the new variant of the Spanish-origin item led to a significant reduction in the item nonresponse rate. In the NTSO, the nonresponse rate was 15 percent for the lower Manhattan version of the Spanish-origin item compared to 27 percent for the Richmond version; in the lower Manhattan census, the rates were 12 and 24 percent, respectively. Furthermore, a telephone reinterview of the NTSO respondents who reported that they were of Spanish origin suggested that the new version of the Spanish-origin item produced a more accurate count of these persons.

The language question was also altered for lower Manhattan. In Richmond, the item included a question on whether a person speaks a foreign language at home more often than English. To meet data needs of the Department of Education, and other Federal agencies, this question was replaced by one that asked "How well does this person speak English?" and three responses were provided: "Very well," "Well," and "Not well or not at all."

Examination of the test to aid in the selection of nonsupervisory field personnel FESAT-G continued in lower Manhattan.

Performance data collected in the Oakland pretest had already led to shortening and refining the FESAT-G. More data were collected in lower Manhattan on enumerators in the first followup and on edit clerks. Analysis and evaluation of the lower Manhattan data allowed a further refinement of FESAT-G. The final version of the test, which was administered to all of the nonsupervisory job applicants during the 1980 census, contained 54 items divided into 5 subtests.

In addition to refinements in the FESAT-G, analyses in lower Manhattan and previous tests produced several other selection aids used during the 1980 census: An application form, a reference check, and structured interviews.

A number of management studies were also conducted in lower Manhattan to evaluate procedures and to provide data for budget and staffing estimates. Among the operations observed were the corrections to address registers resulting from the prec canvass operation, the content edit of mail-returned questionnaires, the followup of nonresponse units, and the followup of units designated as vacant or deleted.

Appendix 2A. Dates and Locations of Planning Meetings

LOCAL PUBLIC MEETINGS

Date	Place	Date	Place
10/20/74	New Orleans, LA	4/24/75	Boston, MA
12/5/74	Little Rock, AR	4/24/75	Cleveland, OH
12/17/74	Shreveport, LA	4/24/75	St. Louis, MO
1/6/75	Omaha, NE	4/25/75	Fargo, ND
1/17/75	Las Vegas, NV	4/28/75	Boise, ID
1/21/75	Milwaukee, WI	4/28/75	Madison, WI
2/11/75	Tallahassee, FL	4/29/75	Moscow, ID
2/14/75	Birmingham, AL	4/30/75	Detroit, MI
2/18/75	Nashville, TN	4/30/75	Portland, OR
2/19/75	Denver, CO	5/6/75	Philadelphia, PA
2/19/75	Memphis, TN	5/7/75	Baltimore, MD
2/27/75	Fresno, CA	5/8/75	New Haven, CT
2/28/75	Charlotte, NC	5/10/75	Albuquerque, NM
3/4/75	Kansas City, MO	5/12/75	Chicago, IL
3/4/75	Louisville, KY	5/12/75	Raleigh, NC
3/11/75	Sacramento, CA	5/15/75	Wichita, KS
3/12/75	Dallas, TX	5/16/75	Cheyenne, WY
3/12/75	Miami, FL	5/20/75	San Francisco, CA
3/12/75	Seattle, WA	5/20/75	Sioux Falls, SD
3/14/75	Atlanta, GA	5/21/75	Columbia, SC
3/19/75	Honolulu, HI	5/22/75	Cincinnati, OH
3/19/75	Salt Lake City, UT	5/22/75	Phoenix, AZ
3/19/75	Wilkes-Barre—Scranton, PA	5/23/75	Billings, MT
3/20/75	New York, NY	5/27/75	Houston, TX
3/25/75	Albany, NY	5/28/75	Des Moines, IA
3/25/75	Washington, DC	6/4/75	Syracuse, NY
3/26/75	Newark-Jersey City, NJ	6/5/75	Charleston, WV
4/8/75	Bakersfield, CA	6/6/75	Trenton, NJ
4/8/75	Oklahoma City, OK	6/17/75	Lewiston, ME
4/9/75	Tulsa, OK	6/19/75	Burlington, VT
4/10/75	Poughkeepsie, NY	6/23/75	Dover, DE
4/11/75	Los Angeles, CA	6/24/75	Concord, NH
4/15/75	San Diego, CA	6/25/75	Providence, RI
4/16/75	Pittsburgh, PA	6/28/75	Jackson, MS
4/22/75	Harrisburg, PA	6/30/75	Anchorage, AK
4/22/75	Indianapolis, IN	7/9/75	Richmond, VA
4/23/75	Minneapolis, MN		

PROFESSIONAL ASSOCIATION MEETINGS

Date	Association	Place
11/20/74	Federal Statistics Users' Conference	Washington, DC
4/16/75	American Society of Planning Officials	Vancouver, Canada
4/30/75	Bank Marketing Association	Philadelphia, PA
5/31/75	Association for Public Opinion Research	Chicago, IL
6/10/75	Special Libraries Association	Chicago, IL
7/2/75	American Library Association, Subcommittee on Census Data	San Francisco, CA
7/5/75	National Education Association	Los Angeles, CA

Appendix 2A. Dates and Locations of Planning Meetings

8/24-28/75	Urban and Regional Information Systems Association	Seattle, WA
8/27/75	American Statistical Association	Atlanta, GA
8/27/75	American Sociological Association	Atlanta, GA
9/3/75	American Political Science Association	San Francisco, CA
10/9-10/75	American Institute of Architects	Washington, DC
10/16/75	Southern Regional Demographic Group	Atlanta, GA
10/21/75	Association for University Business and Economic Research	Williamsburg, VA
10/25/75	American Institute of Architects	Boston, MA
10/28/75	American Institute of Planners	San Antonio, TX
11/7-8/75	American Institute of Architects	Washington, DC
11/16/75	American Public Health Association	Chicago, IL
11/19/75	Social Science History Foundation	Ann Arbor, MI
12/30/75	American Economic Association	Dallas, TX
4/30/76	Population Association of America, Inc.	Montreal, Canada
5/2/76	American Institute of Architects	Philadelphia, PA
6/4/76	Life Insurance Marketing and Research Association	Hartford, CT

STATE AGENCY MEETINGS

Date	States	Place
11/21/74	Delaware, Maryland, Virginia	Annapolis, MD
12/11/74	Kentucky, Ohio, Tennessee	Lexington, KY
3/14/75	Alaska, California, Oregon, Washington	Sacramento, CA
3/19/75	Hawaii	Honolulu, HI
3/25/75	District of Columbia	Washington, DC
6/19/75	Arkansas, Kansas, Missouri, Nebraska	Kansas City, MO
7/17/75	Oklahoma, New Mexico, Texas	Austin, TX
7/25/75	Georgia, North Carolina, South Carolina	Atlanta, GA
8/14/75	Arizona, Colorado, Nevada, Utah	Phoenix, AZ
9/5/75	Iowa, Minnesota, North Dakota, South Dakota	Bismarck, ND
9/16/75	Maine, New Hampshire, Vermont	Montpelier, VT
10/15/75	Connecticut, Massachusetts, New York, Rhode Island	Hartford, CT
11/6/75	New Jersey, Pennsylvania, West Virginia	Trenton, NJ
11/10/75	Alabama, Florida, Louisiana, Mississippi	New Orleans, LA
11/19/75	Idaho, Montana, Wyoming	Helena, MT
12/5/75	Illinois, Indiana, Michigan, Wisconsin	Lansing, MI

1980 CENSUS USERS CONFERENCES

Date	Place
9/11/79	Detroit, MI
9/12/79	Chicago, IL
9/25/79	Atlanta, GA
9/26/79	Miami, FL
10/9/79	Dallas, TX
10/10/79	Kansas City, MO
10/16/79	Los Angeles, CA
10/16/79	Denver, CO
10/17/79	San Francisco, CA
10/17/79	Phoenix, AZ
10/18/79	Seattle, WA
11/13/79	Boston, MA
11/26/79	Washington, DC
11/28/79	New York, NY
1/17/80	Philadelphia, PA

SUMMARY TAPE USER MEETINGS

Date	Group	Place
11/14/74	Private sector users	Chicago, IL
12/12-13/74	Academic users	Atlanta, GA
2/20-21/75	Regional, State, and local government users	Albuquerque, NM

Appendix 2B. General and Results Memorandums of the Pretest and Dress Rehearsal Censuses

Because of the tentative and preliminary nature of many of the 1980 census results memorandums, their distribution outside the Bureau was essentially limited to technicians requesting specific memorandums useful to their research work. Users of the results memorandums should understand that these documents were prepared for internal office use with the aim of circulating information among Bureau staff members as promptly as possible. They, therefore, did not undergo the careful review and clearance normally associated with published census

evaluation documents. The opinions, conclusions, and recommendations presented in them reflect essentially the thoughts of certain staff members at a particular point in time and should not be interpreted as statements of Bureau position.

The titles of some of the memorandums have been slightly altered to give a better indication of the subject or have been shortened to avoid redundancy. Authors of the general memorandums are not given here; some of the results memorandums do not indicate who the author is.

SAN BERNARDINO COUNTY, CA, SPECIAL CENSUS

General Memorandums

1. "Description of Test Objectives and Plans," April 7, 1975.
2. "Time Schedule," April 9, 1975.

Results Memorandums

1. "Data Communications Network: Terminals and Central Computer Access," Alex Listoe and Sheldon Rubin, October 8, 1975.
2. "Telephone Reconciliation for Mobile Home Sales Lots," Richard G. Knapp, August 27, 1975.
3. "Test of Rural Block Identification and Numbering," Russell R. Clements, August 28, 1975.
4. "Field Report on Debriefing of Regional and Local Officials," Stanley D. Matchett, July 31, 1975.
5. "Observations on Terminals and Local Area Review," David L. Word, September 11, 1975.

SALEM COUNTY, NJ, INCOME PRETEST

General Memorandums

1. "Initial Test Design...," January 23, 1975.
2. "Final Plans...," March 10, 1975.
3. "Examples of Public Use Forms," April 21, 1975.

Results Memorandums

1. "Preliminary Mail Response Rates," May 16, 1975.
2. "Final Mail Response Rates," September 10, 1975.
3. "Evaluation of Income Statistics Collected on the Four Questionnaires," George Patterson and Roger Herriot, November 14, 1975.

NATIONAL MAIL INCOME PRETEST

General Memorandums

1. "Plans for the Pretest of Income Questions," April 18, 1975.
2. "Revised Starting Dates...," June 3, 1975.

Results Memorandums

1. "Preliminary Mail Response Rates," June 10, 1975.
2. "Disposition of Mail Returns and Nonresponse Cases," John Bushery, July 7, 1975.
3. "Final Mail Response Rates," Sherry Courtland and Jean Foster, October 14, 1975.
4. "Evaluation of Income Statistics Collected on the Four Questionnaires," George Patterson and Roger Herriot, March 24, 1976.

Appendix 2B. General and Results Memorandums of the Pretest and Dress Rehearsal Censuses

RURAL LISTING TEST

General Memorandums

1. "Description of Test Objectives and Plans," January 23, 1975.
2. "Schedule of Key Dates and Activities," April 23, 1975.

Results Memorandums

1. "Results of Field and Postal Service Activities," January 30, 1976.
2. "Postal Service Hours Claimed...", Maria E. Urrutia, March 31, 1976.
3. "Results of the Coverage Quality Control Operation," Deloris Higgins and Richard Blass, February 4, 1977.
4. "Results and Analysis...", James Dinwiddie, November 14, 1977.

PIMA COUNTY, AZ, SPECIAL CENSUS

General Memorandums

1. "Description of Test Objectives and Plans," October 16, 1975.
2. "Reverse Record Check and Evaluation Study of Flashcard Usage," September 18, 1975.

Results Memorandums

1. "Preliminary Results of Reverse Records Check and Evaluation Study on Flashcard Usage," Steve Willette and Susan Miskura, January 23, 1976.
2. "Debriefing of City, County, and Bureau Personnel," Lincoln Steigerwalt, February 18, 1976.
3. "Remote Terminal Data Transmission Test," Alex E. Listoe, May 21, 1976.
4. "Final Results of Reinterview Study to Evaluate Flashcard Usage," John S. Linebarger, September 2, 1976.
5. "Final Results of the Record Check Operations," John S. Linebarger, September 2, 1976.

TAPE ADDRESS REGISTER DEVELOPMENT TEST

General Memorandum

1. "Description of Test Objectives and Plans," November 13, 1975.

Results Memorandums

1. "Phase 1—Geocoding Addresses for Columbus, Ohio by ADMATCH," Rockwell Livingston, November 19, 1975.
2. "Phase 1—Evaluation of Two Geocoding Systems and a Commercial Address File," Charles D. Jones, June 15, 1976.
3. "CAMEL Phase I—Followup, Evaluation of Revised Automated Geocoder," Edward Lakatos, April 15, 1977.
4. "CAMEL Phase II—Merger and Unduplication of Several Mailing Lists," Earle J. Gerson, June 21, 1979.

TRAVIS COUNTY, TX, PRETEST

General Memorandums

1. "Description of Plans and Objectives," October 14, 1975.
2. "Preliminary Operational Time Schedule," October 15, 1975.
3. "List of Studies...", November 12, 1975.
4. "Draft Pages for Census Questionnaires," November 25, 1975.
5. "Processing and Tabulation Plans," January 15, 1976.
6. "Field Operational Calendar and Definitions of Operations," February 17, 1976.
7. "Copies of Questionnaires," February 17, 1976.
8. "Evaluation of the Majority Edit Rule for Selected Housing Characteristics," March 8, 1976.
9. "Telephone Followup for Content Edit Failures," April 2, 1976.
10. "Evaluation of Geocoded Information/Prelist Blue Cards," March 31, 1976.
11. "Copies of Spanish Language Questionnaires," April 5, 1976.
12. "Outline Plan for Evaluation of Split Coverage and Content Edit Operations...", March 31, 1976.
13. "Operational Calendar for Evaluation Studies," April 9, 1976.
14. "Jeffersonville Operational Time Schedule," August 6, 1976.
15. "Jeffersonville Operational Time Schedule for SMD Studies," September 3, 1976.

Appendix 2B. General and Results Memorandums of the Pretest and Dress Rehearsal Censuses

Results Memorandums

1. "Nature of TAR Addresses Nixed in the Advance Post Office Check," Rockwell Livingston and Patricia Russell, February 10, 1976.
2. "Response to Preenumeration Local Review of Housing Unit Counts," April 5, 1976.
3. "Results of Quality Control on the Assembly of Mailing Packages and the Labeling of Questionnaires for the Tape Address Register (TAR)," William C. Davis, May 6, 1976.
4. "Effectiveness of Various Assistance Centers," John Reeder, May 3, 1976.
5. "Evaluation of the Special Place Operation," Lawrence McGinn, November 18, 1976.
6. "Establishment of Piece Rates Using Data from Followup 1 Time Study...", Bette Goodson, September 18, 1976.
7. "Content Edit Results...", Rachel F. Cordesman (Brown), January 21, 1977.
8. "Mail Return Rates, Nonresponse Followup Rates, Pass and Fail Edit Rates and Telephone Followup," Morris Gorinson, January 27, 1977.
9. "Debriefing of Associated Local Officials," Curtis T. Hill, September 23, 1976.
10. "Analysis of Data Entry...", Martin V. Appel, December 6, 1976.
11. "Last Resort Followup Procedure," John Reeder, November 3, 1976.
12. "Investigation of the Use of Nonresponse Codes for Housing Questions...", Rockwell Livingston, February 15, 1977.
13. "Report of Microfilming Operation in Census Field Office," McRae Anderson, August 2, 1976.
14. "Accuracy of Reports of Average Monthly Utility Costs for Owner and Renter Households," Peter J. Fronczek, March 18, 1977.
15. "Results of the Quality Control on Occupation Coding," Barbara Foster (Blass), April 14, 1977.
16. "Bar Code Readability...", Timothy Swann, March 2, 1977.
17. "Remote Terminal Data Transmission Test," Alex E. Listoe and R.C. Simpson, April 18, 1977.
18. "Preliminary Evaluation of Misclassified Occupied Units Study," Richard LaValley, June 9, 1977.
19. "Results of Address Range and Coverage Checks," Richard F. Blass and Bette Goodson, May 20, 1977.
20. "Results of Mortgage Status Record Check," Robert S. Benedik, June 30, 1977.
21. "Characteristics of Households by Mail Response Status," Rachel F. Brown, July 7, 1977.
22. "Study of Yearly Real Estate Taxes for Single-Family Nonmortgaged Owner-Occupied Housing Units...", Robert S. Benedik, July 9, 1977.
23. "Preliminary Evaluation Results of the Precanvass Operation," Barbara (Foster) Blass, August 4, 1977.
24. "Using a Majority Edit Rule to Reduce Error Rates for Certain Housing Items in Multi-Unit Structures," John M. Bushery, August 8, 1977.
25. "Preliminary Results from the General Coverage Study," Thomas W. Harahush, August 9, 1977.
26. "Preliminary Results of Nonhousehold Sources Coverage Improvement Program," John Thompson, August 24, 1977.
27. "Analysis of Response to Selected Employment Questions," Paula J. Schneider, September 2, 1977.
28. "Requests for Spanish Language Questionnaires," Alvin Etzler, June 13, 1977.
29. "Preliminary Results of Post Census Geocoding Evaluation," Kathryn F. Thomas, October 11, 1977.
30. "Results of Polk Vacants Study," Barbara (Foster) Blass, October 20, 1977.
31. "Results of Tract-Block Delete Evaluation," Barbara (Foster) Blass, October 21, 1977.
32. "Results of the Mover's Operation," Barbara (Foster) Blass, November 3, 1977.
33. "Evaluation of Place-of-Work Coding," John M. Bushery, November 21, 1977.
34. "Nonhousehold Sources Program (supersedes Results Memo #26)," John Thompson, December 8, 1977.
35. "Results of the Evaluation on Geocoding of Prelist Blue Card Addresses Completed During the Advance Post Office Check," Tom Meade and Kathryn Thomas, December 23, 1977.
36. "Results of the Place of Work Coding Quality Control," Steven R. Machlin, January 18, 1978.
37. "Using the Majority Edit Rule to Impute Responses to 'Not Answered' Housing Items for Multi-Unit Structures," John M. Bushery, January 10, 1978.
38. "Analysis of Split-Panel Results for Plumbing Facilities," David A. Koons, September 21, 1977.
39. "Evaluation of the Double Nixie Procedure...", Richard Griffin, February 16, 1978.
40. "Quality Control Results of the General Coding Operations," David Kimble, May 12, 1978.
41. "Evaluation of the Special Place Procedure...", Richard Griffin, June 20, 1978.
42. "Evaluation Results of the Check-Off Procedure," Richard Griffin, September 28, 1978.
43. "Trace Sample Results," Angela-Jo (Castranova) Wetzels, October 16, 1978.
44. "Fall vs. Spring Listing Test," John Thompson, October 27, 1978.
45. "Enumeration Characteristics of Blue Card Non-House Number/Street Name Addresses," Thomas W. Harahush and Andrew J. Lebold, April 12, 1979.
46. "Coverage Check of Off-Base Military Personnel," John Thompson, May 25, 1979.

Appendix 2B. General and Results Memorandums of the Pretest and Dress Rehearsal Censuses

DATA COLLECTION UNIT TEST

General Memorandum

1. "Description of Test Objectives and Calendar of Field Operations," January 26, 1976.

Results Memorandum

1. "Results and Analysis....," James Dinwiddie, April 28, 1980.

NATIONAL CONTENT TEST

General Memorandums

1. "Plans for the National Content Test," May 6, 1976.
2. "Calendar of Major Activities....," June 24, 1976.
3. "Copies of Questionnaires," July 9, 1976.
4. "Copies of Questionnaires," November 3, 1976.
5. "Timetable of Processing Operations for Phase 1 Questionnaires," December 22, 1976.
6. "Schedule of Operations, Phase 2," December 22, 1976.
7. "Revised Schedule, Phase 2," February 25, 1977.

Results Memorandums

1. "Mail Return Rates, Telephone Assistance Line Results, and Preliminary Response Rates," David Silver, November 18, 1976.
2. "Microfilm Review of Total Income Entries on Unedited Mail Returns," George Patterson and Roger Herriot, November 26, 1976.
3. "Completed Interview Rates—Phase 2," Larry Carstensen, December 3, 1976.
4. "Preliminary Tallies of a Sample of the Unedited Mail Returns," Charles E. Johnson, Jr., December 20, 1976.
5. "Tentative Analysis of Data from the Unedited Mail Returns," David A. Koons and Betty Kent, February 7, 1977.
6. "Phase 1 Return Rates," David Silver, March 24, 1977.
7. "General Coding Quality Control Results," Barbara (Foster) Blass, June 17, 1977.
8. "General Coding (Reinterview) Quality Control Results," Michael L. Mersch, July 6, 1977.
9. "Frequency Distribution from Unedited Early Mail Returns and Final File," Cynthia M. Taeuber, July 18, 1976.
10. "Disability Data....," John McNeil and Douglas Sater, September 9, 1977.
11. "Household Relationship Reinterview Results," Arthur Norton, October 5, 1977.
12. "Analysis of Split-Panel Test for Plumbing Facilities Results," David A. Koons, September 21, 1977.
13. "Standard Errors for Selected Item Totals....," Larry Cartenson, February 15, 1978.
14. "Housing Characteristics Reinterview Results," David A. Koons and Coy L. Lay, Jr., February 21, 1978.
15. "Split-Panel and Reinterview Results for Number of Units in Structure," David A. Koons, March 22, 1978.
16. "Evaluation of the 1976 Reinterview Survey of School Enrollment, Educational Attainment, and Vocational Training," Larry E. Suter, December 29, 1978.

CAMDEN, NJ, PRETEST

General Memorandums

1. "Plans and Objectives," March 19, 1976.
2. "Precensus Operational Time Schedule," April 5, 1976.
3. "Field Operations Changes," July 16, 1976.
4. "Field Operational Calendar," July 16, 1976.
5. "Copies of Questionnaires," July 28, 1976.
6. "Copies of Spanish-Language Questionnaires," September 8, 1976.
7. "Operational Calendar for Evaluation Studies," September 20, 1976.
8. "Staffing Requirements for Evaluation Studies....," December 3, 1976.
9. "Description of Public Information Evaluation Survey," December 9, 1976.
10. "Jeffersonville Time Schedules for Post-Enumeration Operations," March 15, 1977.

Results Memorandums

1. "Mail Return Rate," Gerald J. Post, October 20, 1976.
2. "Publicity Campaign Final Report," Kenneth C. Field, October 15, 1976.

Appendix 2B. General and Results Memorandums of the Pretest and Dress Rehearsal Censuses

3. "Quality Control Results for the Assembly of Mailing Packages and the Labeling of Questionnaires....," William C. Davie and Thomas Meade, December 27, 1976.
4. "Final Report—Study of Telephone Followup Operations," December 1976.
5. "Content Edit Operation Study Final Report," November 1976.
6. "Management Study of 100% Transcription," February 1977.
7. "Initial Results of the Public Information Campaign Evaluation Survey," Jean Foster and Leo Estrada, April 18, 1977.
8. "Cross-Tabulation Results of the Public Information Campaign Evaluation Study," Jeff Moore, May 4, 1977.
9. "Management Study of Place-of-Work Coding," February 1977.
10. "Quality Control Results for Industry and Occupation Coding," Barbara F. Blass, September 20, 1977.
11. "Number and Procedures for Requests for Spanish Language Questionnaires," Alvin Etzler, June 13, 1977.
12. "Blue Card Evaluation," Thomas W. Harahush, September 28, 1977.
13. "Preliminary Results of the Trace Sample," Richard Griffin, September 19, 1977.
14. "1970-1976 TAR Evaluation Study Final Results," Richard LaValley, October 27, 1977.
15. "Primary Results of the Camden Nonhousehold Source Coverage Improvement Program," John Thompson, October 28, 1977.
16. "Analysis of General Coding Dependent Verification Miss Rate," David C. Whitford, November 11, 1977.
17. "Preliminary Evaluation Results of the Precanvass," Thomas W. Harahush, November 18, 1977.
18. "Results of the Place-of-Work Coding Quality Control," Steven R. Machlin, January 18, 1978.
19. "Quality Control Results of the General Coding Operations in Travis County and Camden," David Kimble, May 12, 1978.
20. "Evaluation of the Team Enumeration Study," Richard LaValley, June 16, 1978.
21. "Results of the Casual Count Operation, Tested as Part of the Special Place Procedures," Richard Griffin, July 7, 1978.
22. "Results of the Bar Code Test," Edward Lakatos, July 17, 1978.
23. "Evaluation of Resource Materials from the Place of Work Coding," Gordon Mikkelson, September 18, 1978.
24. "Additional Results from the Nonhousehold Sources Coverage Improvement Program," John Thompson, October 25, 1978.
25. "Preliminary Results of the General Coverage Study," Irma Fernandez, November 8, 1978.
26. "Trace Sample," Richard Griffin, April 20, 1979.
27. "Final Precanvass Evaluation Report," Earle J. Gerson, October 24, 1980.

NAVAJO RESERVATION PILOT STUDY

1. "Report on the Findings of Special Enumeration—Population Register Match for Three Chapters of the Navajo Population," Nampeo McKenney and Gloria Porter, June 14, 1977.
2. "1976 Navajo Project Results Memorandum—Field Activities," Marvin Postma, April 25, 1977.
3. "Geographic Aids Utilized in the Pilot Enumeration of the Navajo Reservation," Valerie Gregg, n. d.

RURAL RELIST TEST

General Memorandums

1. "Description of Census Plans and Objectives," January 5, 1977.
2. "Field Operations Calendar," January 5, 1977.

Results Memorandums

1. "Management Study-Relisting Time Values," April 7, 1977.
2. "Post Office Check Quality Control," Michael E. Haas, October 14, 1977.

OAKLAND, CA, PRETEST

General Memorandums

1. "Description of Plans and Objectives," November 26, 1976.
2. "Precensus Operational Time Schedule," November 30, 1976.
3. "Population and Housing Estimates," December 20, 1976.
4. "Precensus Operational Time Schedule, Revised," December 29, 1976.
5. "Use of Structure Codes for Editing Housing Facility Characteristics," January 6, 1977.
6. "Special Place ED's...", January 11, 1977.
7. "Enumeration of Shipboard Personnel...", January 27, 1977.
8. "Draft Copies of Questionnaires," February 2, 1977.
9. "Final Draft Copies of Questionnaires," March 1, 1977.

Appendix 2B. General and Results Memorandums of the Pretest and Dress Rehearsal Censuses

10. "Copies of Questionnaires," April 5, 1977.
11. "Some Changes in Plans....," June 3, 1977.
12. "Revised Schedule of Field Operations and Staff Requirements," July 22, 1977.
13. "Operational Calendar for Evaluation Studies," August 5, 1977.

Results Memorandums

1. "Summary Results of Advance Post Office Check," Rockwell Livingston, February 10, 1977.
2. "Results of the Geocoding Operation," Jacob Silver, June 24, 1977.
3. "Evaluation of the Use of Reminder Cards," Jean Foster, August 17, 1977.
4. "Preliminary Evaluation of Veteran Status Responses," Mark S. Littman, August 5, 1977.
5. "Preliminary Results on the Accuracy of Reports of Real Estate Taxes for Owner-Occupied Households," Peter J. Fronczek and Coy L. Lay, Jr., September 20, 1977.
6. "Requests for Spanish Language Questionnaires," Alvin Etzler, June 13, 1977.
7. "Management Study of the Tract and Block Office Coding Operation," Frank Korpusik, September 6, 1977.
8. "Management Study of Open, Check-in, and H-4 Edit," Maurice T. Spillane, September 1, 1977.
9. "Management Study of Special Enumeration," Michael Wyatt, September 14, 1977.
10. "Management Study of Special Places Check-in, Serialization, and Edit," Barbara Harris, July 26, 1977.
11. "Management Study of the Content Edit of Mail-Returned Questionnaires," Nancy Tarry, August 22, 1977.
12. "Management Study of T-Night Enumeration," Samuel Reynolds, August 15, 1977.
13. "Management Study of Postal Corrections from Casing Check," Don Brown, October 14, 1977.
14. "Management Study of Preparation of ED Maps," Robert L. Jones, July 26, 1977.
15. "Management Study of Precanvass Enumeration," Don Brown, July 26, 1977.
16. "Evaluation of Assistance Centers," Alvin Etzler, September 23, 1977.
17. "Management Study of Population and Housing Counts 1, and Diary Review," John Briner, September 30, 1977.
18. "Review of Total Income Entries on Unedited Mail and Nonmail Returns Through Followup 1 from the Trace Sample," George Patterson and Roger Herriot, October 31, 1977.
19. "Failed Edit Rates for Population and Housing Questions from the Oakland Trace Sample Early Mail Review," George Patterson and Roger Herriot, October 31, 1977.
20. "Management Study of Field and Block Coding," Joseph A. Norvell, October 27, 1977.
21. "Final Field Count of Housing Units," Rachel F. Brown, November 30, 1977.
22. "Management Study of Payroll Office Audit," Sheila Ricks, November 14, 1977.
23. "Public Housing Evaluation Study," Janet Tippet, January 12, 1978.
24. "Management Study of Telephone Followup Operation," Barbara Harris, December 1, 1977.
25. "Management Study of Merge and Check of Nonhousehold Sources," Warren O. Davis, January 19, 1978.
26. "Management Study of Followup 2 Enumeration," Michael Wyatt, January 19, 1978.
27. "Quality Control for the Assembly of Mailing Packages and Labeling of Questionnaires," Steven R. Machlin, March 22, 1978.
28. "Further Evaluation of the Use of Reminder Cards," Jean Foster, May 30, 1978.
29. "Results of the Quality Control on Industry and Occupation Coding," Barbara F. Blass, June 19, 1978.
30. "Quality Control of Place-of-Work Coding," Steven R. Machlin, June 30, 1978.
31. "Rectifier Evaluation in the Industry and Occupation Coding Operations," Barbara F. Blass and Steven R. Machlin, August 11, 1978.
32. "Results of the Rectification Evaluation Study of the Place-of-Work Coding Operation," Steven R. Machlin, August 11, 1978.
33. "Results of the Postcoder Evaluation Study of the Place-of-Work Coding Operation," Steven R. Machlin, November 3, 1978.
34. "Results of the Quality Control of the General Coding Operations," John A. Grom, November 15, 1978.
35. "Final Results of the 1970 TAR Evaluation Study," Kennon R. Copeland, April 20, 1979.
36. "Final Results of the 'Whole Household—Usual Home Elsewhere' Procedure Evaluation Study," Sue Lord, May 14, 1979.
37. "Accuracy of the Reports of Utility Costs of Occupied Households," David A. Koons, July 20, 1979.
38. "Study of Units Misclassified as Occupied," Richard Griffin, August 22, 1979.
39. "Special Weber's Rule Analysis, Using the Trace Sample," Richard Griffin, August 22, 1979.
40. "Final Results of the Military Procedures Evaluation Study," Sue Lord, November 8, 1979.
41. "Analysis of the Write-in Feature," Deborah A. Harner and Edward Lakatos, April 23, 1979.
42. "Evaluation of Household Roster Check," Kennon R. Copeland, January 7, 1980.
43. "Trace Sample Analysis," Richard Griffin, March 13, 1980.

DRESS REHEARSALS

General Memorandums

1. "Prelist Procedures," May 19, 1977.
2. "Working Groups (List)," May 23, 1977.

Appendix 2B. General and Results Memorandums of the Pretest and Dress Rehearsal Censuses

3. "Working Groups (List)," June 10, 1977.
4. "Team Enumeration," July 15, 1977.
5. "Precensus Operational Time Schedule for the Tape Address Register and Prelist Areas," August 29, 1977.
6. "Quality Control Sample for Advance Post Office Check and NIXIE Check: Description," September 2, 1977.
7. "Vacant Unfit Housing Structures," October 20, 1977.
8. "Titles of the Public Use Forms," October 28, 1977.
9. "Prelist Working Group Recommendations," November 1, 1977.
10. "Precensus Operational Time Schedule," November 2, 1977.
11. "Pre-Enumeration Operational Time Schedule for the Conventional Office," November 9, 1977.
12. "Payment of a Production Bonus to Census Enumerators," October 27, 1977.
13. "Revision in the Plans for Collecting '100-Percent' Income Data," December 8, 1977.
14. "Evaluation Projects," November 28, 1977.
15. "Final Draft Copies of Questionnaires," January 18, 1978.
16. "Revised Precensus Operational Time Schedule for Lower Manhattan," January 27, 1978.
17. "Description of Census Plans and Objectives," February 10, 1978.
18. "Copies of Questionnaires," February 13, 1978.
19. "Copies of Questionnaires for La Plata and Montezuma Counties," February 13, 1978.
20. "Identification of Public Use Forms," April 6, 1978.
21. "Copies of Spanish Language Questionnaires," April 7, 1978.
22. "Revised Precensus Operational Time Schedule...", May 12, 1978.
23. "Final Draft Copies of Questionnaires...", July 24, 1978.
24. "Change in Date...", August 7, 1978.
25. "Copies of Questionnaires...", August 25, 1978.
26. "Operational Time Schedule for Processing at Michoud," October 10, 1978.
27. "Revised Operational Time Schedule for Processing at the New Orleans Office," October 25, 1978.

Results Memorandums

1. "Management Study of Address Range Checks Listing," Sheila Ricks and Mike Wyatt, January 17, 1978.
2. "Summary Results of Advance Post Office Check," Rockwell Livingston, January 17, 1978.
3. "Final Mail Return Rate," Gerald J. Post, November 14, 1978.
4. "Reporting Results for Alternative Versions of the Spanish Origin Question," Nampeo McKenney and Edward Fernandez, December 1, 1978.
5. "Evaluation Results of the Post-Enumeration Post Office Check," Kennon R. Copeland, May 14, 1978.
6. "Evaluation Results of Lockbox Coverage Improvement," Gordon Mikkelsen, May 25, 1979.
7. "Lower Manhattan Trace Sample Results," Cynthia M. Brown, May 19, 1979.
8. "Results of Rectification Evaluation of Place-of-Work/Migration Coding," John A. Grom and David C. Whitford, November 8, 1979.
9. "Evaluation of the Coding of Supplementary Questionnaires for American Indians," Charlotte M. Davis, November 8, 1979.
10. "Microfilming and the Quality Control Management Information System," Earle J. Gerson, January 7, 1980.
11. "Analysis of Packing Materials," Edward Lakatos, November 13, 1979.
12. "Results of Industry and Occupation Coding Quality Control," Charlotte M. Davis, July 21, 1980.
13. "Processing Biases of the 100% Diary Review," Deborah A. Harner and Kathryn F. Thomas, July 21, 1980.
14. "Place-of-Work/Migration Coding Postcoder Evaluation," John A. Grom, October 24, 1980.

NATIONAL TEST OF SPANISH ORIGIN

General Memorandums

1. "Plans for National Test on Spanish Origin," June 30, 1978.
2. "Schedule of Operations," July 5, 1978.
3. "Questionnaires and Instruction Sheets," July 31, 1978.

Results Memorandums

1. "Results of Reporting in Alternative Versions of the Spanish Origin Question...", Nampeo McKenney and Edward Fernandez, December 1, 1978.
2. "Reporting from the Condominium and Cooperative Questions on the Mail Returns," Coy L. Lay, Jr., January 5, 1979.